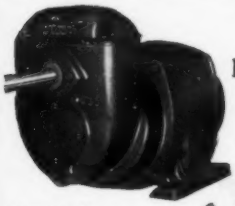
Hitchcock's Machine Tool Blue Book

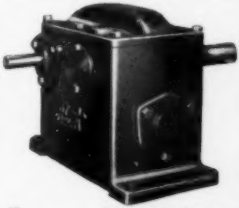
633Z
44

JANUARY, 1934 TWENTY-NINTH YEAR



otorized

Gears and Reducers That Satisfy !

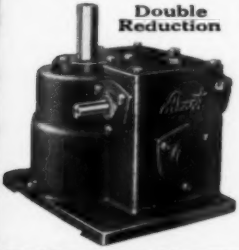


Parallel Drive
double reduction.

Abart
Gears and Reducers

All Types :: Motorized or Standard :: Finest Materials

Manufacturers of a complete line of speed reducers made to fit your exact requirements. Our modern plant and staff of skilled engineers assure you of the finest reducers at the lowest possible cost. Satisfaction guaranteed. *We also manufacture gears of all types and materials.*



Double Reduction

Let Us Quote You—

Write or Wire

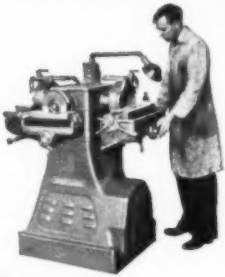
Abart

Gear & Machine Co.
4832 W. 16th St., Cicero, Ill.

PUBLISHED AT 508 So. DEARBORN ST. CHICAGO

SUNDSTRAND

3-Wheel Tool Grinder



A big, powerful, convenient machine for grinding and honing accurate, smooth, keen edges on cutting tools. Made in three types (a) for tungsten carbides (b) for high speed steels, (c) for tungsten carbides and steels. Speeds up tool-sharpening, improves cutting, lengthens tool life.

SUNDSTRAND MACHINE TOOL CO. · ROCKFORD, ILLINOIS, U.S.A. ·

BENCH CENTERS

Accurate, compact, portable. Adjustable heads. Quick-acting spindle. Seven sizes.

BALANCING TOOLS

Made in 5 sizes, with capacities from 800 lbs. to 24,000 lbs. Others for propellers, flywheels, pulleys, etc.

These Sundstrand tools, like our Lathes and Milling Machines, cut costs and make work easier. » » » INVESTIGATE! Address our Dept. H for details.

Hitchcock's
Machine Tool Blue Book

Selected Circulation

20,000 Monthly

JANUARY, 1934 TWENTY-NINTH YEAR

HUNGRY—

For the last four years most of the industrial concerns of the country have been equipment-starved.

They are hungry now for plant rehabilitation, and as business improves they will buy, and buy aplenty.

What could be a better time than this to advertise to the users of metal-working equipment what you have that should be included in their purchases?

And many foreign manufacturers are even hungrier. The BLUE BOOK covers not only the best plants in the U. S., but leading English-speaking importers in over 25 foreign countries.

Manufacturers of machine tools and allied equipment might treat themselves to a pleasant surprise by running a good advertising campaign in this publication.

Published By

Hitchcock Publishing Co.

508 S. Dearborn St., Chicago, Ill.

Consult the Classified Finding Index for your requirements

A Single Spindle Footburt Sipp Sensitive Drill

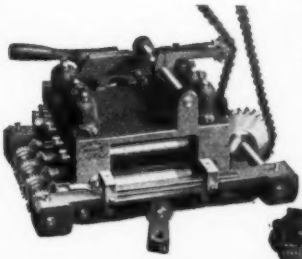
Made in three sizes of single and multiple spindle models

More holes with this machine

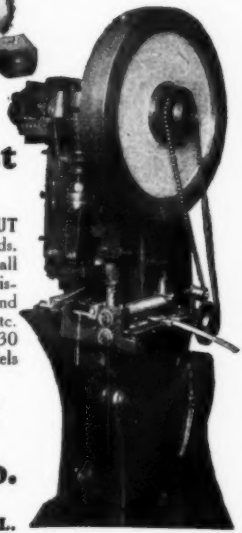
Why? Because you can change speeds in two seconds or belts in ten seconds—because the automatic idlers keep the belt pulling to capacity at all times—because the full ball bearing equipment and accurate machining gives a smooth, fast cut.

Write for No. 650 Folders

The Foote-Burt Company, Cleveland, O.



WE design and build progressive and automatic dies for high speed production. Submit samples of your stamping for an estimate.



To Get Utmost Efficiency

from your punch presses use NOC-OUT Automatic Reversible Roll Feeds. Easily installed on any press, this small unit eliminates costly delays and mistakes by automatically feeding any kind of stock—metal, paper, brake lining, etc. —from coils in lengths from 0 to 30 inches per stroke of press. Six models to choose from.

Write for Your Copy of Bulletin "H" describing NOC-OUT Feeds — also details of Our Free Trial Offer.

Wittek Mfg. Co.

4309 W. 24th Place,
Dept. "H" CHICAGO, ILL.

FAST — ACCURATE — ECONOMICAL

NOC-OUT

Automatic

ROLL FEEDS

ARMSTRONG

TRADE MARK REG. IN U.S. PAT. OFFICE

Bits and Blades

for ARMSTRONG TOOL HOLDERS

A super-steel that makes practicable greater speeds and feeds — from 25 to 100 more feet per minute.

ARMSTRONG HIGH SPEED Bits and Blades are the cheapest on a cost-per-cut basis; are the most economical. Considering all the cost of metal cutting—machine investment, labor, overhead—only this fine cutting steel is really economical.

Each ARMSTRONG HIGH SPEED Bit and Blade is strictly speaking a fine tool—special steel, heat treated, hardened and tempered, exact size, ground ready for use.

Write for Circular

ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
308 N. Francisco Ave., CHICAGO, U. S. A.

Buy this 9" ATLAS LATHE

with what it SAVES on power

$79

as shown less motor

10 Months Terms if you wish

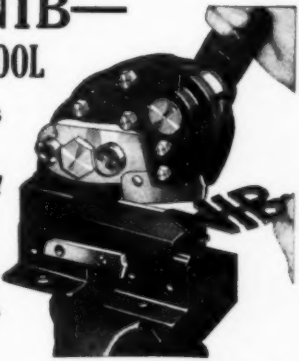
Do your small work on an economical ATLAS. Uses only ¼ or ½ h. p. motor. Power savings have paid for many an ATLAS in 6 to 9 months. A fine Tool, strongly built from best materials by famous machinery manufacturer. Running-tested for .001" accuracy. **MODERN DESIGNED:** built-in countershaft, V-belt drive, 45 Zamak parts. Hollow spindle automatic reversible feed, compound rest. 6 speeds. Cuts 4 to 72 threads. 18" between centers. Ask for free catalogue of lathe, tools and fittings.

ATLAS PRESS CO., 1850 N. Pitcher St., Kalamazoo, Mich.

HANDNIB—
A NIBBLING TOOL

New Process Saves You 90% On—

Templates, Trial Blanks, Sheet Metal Experimental Work, etc.



Illustrations and prices on complete line sent on request.

NATIONAL MACHINE TOOL CO.
1536B CLARK ST., RACINE, WIS.

Improved Thompson Universal Grinder

Self-contained and motor driven, this standard Grinder combines efficient means for the rapid and accurate production of every grinding operation required in a machine shop.

All standard machines equipped with auxiliary independent coarse cross feed for surface grinding.

Capacity 12"x36"

The Thompson Grinder Co.
1534 West Main St., SPRINGFIELD, OHIO

Color Proves Asset In Machine Plants

Light Paints Improve Worker Vision, Efficiency, Morale, Experiments Show

Washington, D. C., December 20—Light colored paints have a direct bearing on worker efficiency, according to results of experiments being conducted in leading industrial and manufacturing plants throughout the United States.

"Clean, sanitary well painted workshops have a wholesome effect on employees engaged in machinery production plants, and enable them to do better and more efficient work," according to W. H. Rastall, chief of the machinery Division of the department of commerce.

"Greater visibility for factory workers as a result of properly colored machines and equipment," Mr. Rastall says, "has received careful consideration from industrialists in recent years. Similar surveys are now being made with the use of paint from the standpoint of sanitation and increased production."

Dr. Henry A. Gardner, one of the country's leading paint research experts, has done considerable experimental work along these same lines.

"The illumination of factories," says Dr. Gardner, "has received careful consideration in recent years. Increased output, improved workmanship, and a minimum of accidents have resulted in nearly every instance where better lighting systems have been installed.

"Wall treatment," he says, "as a means for conserving the light afforded by modern illuminants is of the greatest importance. Practical experiments show that rays from powerful lights, falling upon dark brick or stone wall, give less light to a room than rays from less powerful lights falling upon similar walls that have been painted in light colors with dust resisting, washable paints. From the standpoint of economy, it is of interest to record the fact that the monthly cost of illuminants for lighting dark-walled factories may be substantially reduced by painting the interiors in light colors."

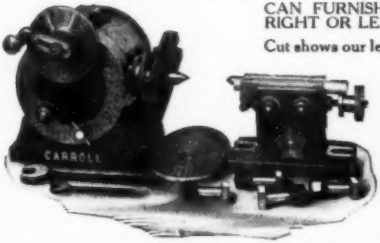
In all manufacturing plants, it is pointed out, there are certain production assets whose merits are just beginning to receive due consideration. Lighting, air conditioning,

(Concluded on Page 10)

Carroll 10½" Universal Dividing Head

CAN FURNISH EITHER
RIGHT OR LEFT HAND

Cut shows our left hand type



Liberal Allowance Made on Your Old Dividing Head.

Quality at a reasonable price makes it a profitable investment.

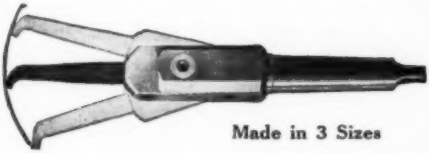
All makes of Dividing Heads rebuilt at a low price.

Bulletin and prices showing complete line mailed on request.

Wm. Carroll & Son.

1776 Lexington Ave. (Norwood), Cincinnati, Ohio, U.S.A.

MAXWELL
E-Z SET BORING TOOL



Made in 3 Sizes

Simple in construction, Compact, Rigid, Positive adjustment.

Write for circular and prices

F. A. MAXWELL COMPANY

8444 Broadway, Cleveland, Ohio.

the temperature control, the possibility of windowless buildings and sound control are assuming a new importance in industry. Dr. Gardner and other experts believe that color must now be added to the list. Color in the manufacturing plant they assert, has proved a definite physical and mental aid to the worker. The correct choice of light and contrasting background plays an important part in visual accuracy, and means better and faster work. Color has, in many factory experiments, created an improved mental and psychological condition that means much in worker morale.

Dr. Gardner states that "if annual per capita expenditure for paint products in this country is $4.76, the annual economical saving per capita through their use may be as high as $28.70. The greater percentage of sanitation and safety, resulting from the use of paint, and the tangible benefits derived from living and working in colorful surroundings are extra dividends."

New Machine Tools Needed

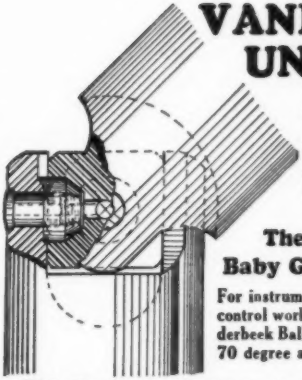
Frozen industrial loans will be more quickly liquidated if bankers extend borrowers additional credit for the purchase of modern equipment and machinery, says Philip E. Bliss, president of the Warner & Swasey Co., Cleveland, in an article entitled "New Machines Needed to Create Profits under the New Deal", published in the December issue of Bankers Monthly.

Present bank loans, says Mr. Bliss, will be more rapidly repaid if industry is able to purchase machine tools which will cut production costs to meet increased cost of labor. Credit is needed to make such purchases.

In particular Mr. Bliss cites the case of a company in which machine tools used for one important operation are obsolete.

"Replacement by new and more efficient machines," says Mr. Bliss, would cost $75,000. The saving effected in operating costs would amount approximately to $42,000 a year. The new machine tools would therefore pay for themselves in a little over 18 months. Net earnings over a period of time would be substantially improved. It would appear obvious, under those circumstances, that this $75,000 expenditure was advisable—even if it had to be made with borrowed money.

VANDERBEEK UNIVERSAL JOINTS



The GIANT with hardened and ground working surfaces for heavy duty.

The Baby Giant

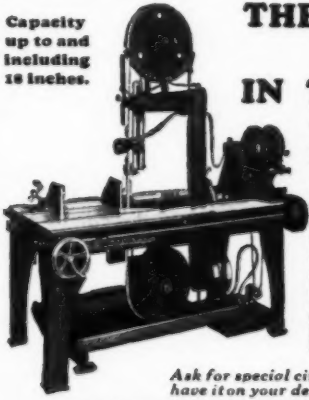
For instrument and control work. The Vanderbeek Ball Joint runs to 70 degree angle.

Write for prices and state your requirements

AMERICAN TOOL WORKS, Inc.

25 High Street, Hartford, Conn., U. S. A.

Capacity up to and including 18 inches.



THE BUSIEST TOOL IN THE SHOP

The Marvel Metal Band Saw No. 8—

is well known for its fine construction, and its accuracy in cutting solid bars, pipe, tubing, structural shapes, etc. A valuable feature is its ability to cut on right or left angle without swinging the bar around the shop. IT HAS MANY OTHER VALUABLE IMPROVEMENTS. HUNDREDS ARE IN USE.

Ask for special circular so you can have it on your desk for reference.

ARMSTRONG-BLUM MFG. CO.

341 N. Francisco Ave., Chicago, Illinois

Gem Drill Press

Made In 3-sizes Up To 10½"

Vise

Milling Machine

Vise

Jaws open 6¾"

Plain & Swivel Base Vise

J. E. Martin Tool & Die Works

528 W. State St., SPRINGFIELD, OHIO

Abolish Expensive Hand Finishing

with a

Simplex-M Abrasive Band Grinder

This Grinder accelerates production and cuts costs. Hand emerying or filing operations are antiquated in comparison. The use of this new modern machine assures straight grain finishes with sharp edges. *Details of this and other styles and sizes on request.*

WALLS SALES CORP., 96 Warren Street NEW YORK

Send Us Your Inquiries

We are always glad to forward a memo of any machinery or equipment for which you are in the market to all of our advertisers without charge.

The Blank Form

printed on the other side of this page is for this purpose, and you are free to make use of it without obligation.

It has been the means of bringing many buyers and sellers together, to their mutual profit and satisfaction.

Mail your needs to

HITCHCOCK PUBLISHING CO.

508 S. Dearborn St., Chicago

FREE BUYERS' SERVICE

To All of Our Readers

If you will list below the new or used metal-working machines or machine shop equipment for which you are in the market, and mail it to us, we shall be glad to broadcast it to all of our advertisers. Replies will come from them, not from us.

But if you prefer that we put you in direct touch with the manufacturers of any particular machine tool or other metal-working equipment, let us know and we will endeavor to locate them for you.

Name .....

Address .....

We are in the market for .....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

Mail to Hitchcock Publishing Co., 508 So. Dearborn St., Chicago, Ill.

TAPPING

PERFECT HOLES AT 3000 R. P. M.
WITH THE NEW

"PROCUNIER"

BALL BEARING | **TAPPING ATTACHMENT**

FRICTION DRIVE At Spindle Speed

CAPACITY:

Size No. 1 { Brass 1/4" / Steel 7/16"
Size No. 2 { Brass 1/2" / Steel 5/16"

Also other sizes and styles

FRICTION REVERSE At Twice Spindle Speed

Write for our catalog with prices

PROCUNIER SAFETY CHUCK CO.
14 S. Clinton St., :-: -:- Chicago, Ill.

STANDARDIZATION PAYS

UP TO

ONE HUNDRED HORSEPOWER

FROM STOCK!

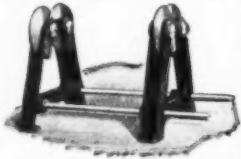
SEND FOR CATALOG

BOSTON GEAR WORKS, INC.
DEPT. HMT, NORTH QUINCY, MASS.
BOSTON NEW YORK PHILADELPHIA CLEVELAND CHICAGO

BOSTON GEARS

Anderson Ever Ready Balancing Ways

Exceedingly Sensitive



Easy to Manipulate

Made in six sizes to balance anything that revolves from a crank shaft to a 24,000 lb. turbine rotar. They require no special leveling, no adjustment, and no centers.

Equipped with glass-hard spindles, chilled steel discs, and especially sensitive ball bearings, to give accurate, long time service.

"Swing"	20"	40"	60"	72"	96"	72"
Greatest distance bet. standards	20"	30"	30"	66"	88"	20'
Capacity in lbs.	1000	2000	2000	5000	10000	24000
Approx. shipping weight	45	90	150	350	650	
Code	Bend	Bid	Bin	Bib	Ben	

Anderson Bros. Mfg. Co.
1915 Kishwaukee St., Rockford, Ill.

TRY us on your
Difficult Riveting Job

We have solved the riveting problem for many manufacturers, who thought hand riveting was their only way out, until they investigated the "GRANT," which does their work better and at much less cost.

"GRANT" Noiseless Spinning Riveters

cover all classes of work, including awkward pieces and riveting in out-of-the-way places.

Send samples of your work for riveting and cost estimate

The Grant Mfg. & Machine Co.
C. E. Station, Bridgeport, Conn.

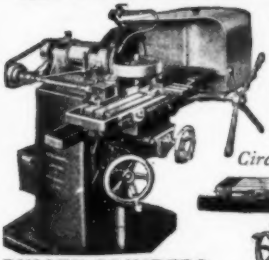
GRINDERS

for roughing and finishing

FLAT WORK

Ring Wheels 12" and 18"
Table travels 16" and 24"

For Production to Tool Room



Send for Circulars

Work Bound to be True

Flat Work Grinder

PULLEY GRINDERS

Finish Belt Surface, Crowned or Straight, from the Rough. *Also* **Truck Treads and Curved Work.**

GRINDER CHUCKS hold Abrasive Rings, 10" to 30" dia.

THE GRAHAM MFG. CO., 70 Willard Ave. PROVIDENCE, R. I.

A thorough coverage is necessary to maximum advertising results. This is a truism.

For the greatest coverage of the richest markets for machine tools and shop equipment—and at the lowest rates — concentrate your advertising in

HITCHCOCK'S
MACHINE TOOL BLUE BOOK

Over 20,000 Copies mailed monthly

SPEED SPOT WELDERS

MANUAL

½ to 150 K. V. A.

Made foot-operated and variable speed **AUTOMATIC MOTOR DRIVE,** no change gears, for welding from .0005 to 5/8" combined thickness.

Welders for Fine Work Priced As Low As

$55.00

Submit Your Problems

AUTOMATIC

EISLER ELECTRIC

763 So. 13th Street, NEWARK, N. J.

Distributor and Dealer Connections Desired

Acme Standardized Drill Jig Bushings

Acme Drill Jig Bushings are a standardized product, carried in stock for prompt delivery in over 6,700 standard items. They are completely finished and ready for use. The Bushings are made by the most exacting scientific methods, which insures long wear, accurate fit and absolute satisfaction. Special sizes made to order.

Send for our Bulletin, which gives complete details, sizes available, and low prices.

ACME INDUSTRIAL CO.

419 N. Carpenter St., Chicago

To Industrial Plants

For the mutual benefit of yourselves and our advertisers, we want to be sure that the Blue Book goes, without cost, to those in your plant who can use it to good advantage.

Quite a number of you, particularly among automobile manufacturers, have sent us lists of the prominent men in your organizations who are most closely identified with the planning of your improvements and the selection or purchase of your machinery.

If you have not done this, you are earnestly requested to send us such a list of names, so that we may mail the Blue Book regularly every month to those of your own selection, without cost or obligation of any kind whatsoever. Simply tear out this page, write the names on the reverse side, and mail it to the publisher.

Our only object is to make the Blue Book the best buying and selling medium on earth between manufacturers of machine tools and shop equipment and plants such as yours.

(*See next page*)

.....,193

HITCHCOCK PUBLISHING CO.
508 S. Dearborn St., Chicago, Ill.

Please send your Machine Tool Blue Book, without cost, to the following members of our organization, who have to do with planning the equipment of our machine shops and the selection or purchase of our machine tools and other shop requirements:

(Give both names and titles)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

It is understood that you are to use the above names as a mailing list for your Machine Tool Blue Book only, and that they will not be used for any other purpose.

Name.....

Street No.....

City..... State.....

JUST 1 SET OF 12

Champion Expanding Mandrels

Will fill by thousandths any inside diameter from ½" to 6½"

Simple—only 2 parts; *Handy*—always ready for any job; *Efficient*—dependable, accurate. Costs 80% less than solid arbors of equal range.

Write for Catalog

The Western Tool & Mfg. Co.

SPRINGFIELD, OHIO

T. H. L. FRONT LEVER BENCH PUNCH

Malleable iron body; working parts hardened. Steel shaft and plunger. Die cannot lose alignment with punch. All parts interchangeable. Built for hardest, toughest work. Weight 70 lbs.

We can supply extra Punches at 20 cents each; extra Dies at 30 cents.

Capacity ½" holes through 3/16" steel; 13/32" through ¼" steel. Can also be made for up to ⅞" holes through thinner metal. Punches and dies in stock from ⅛" to ½".

Immediate shipment from stock

T. H. LEWTHWAITE MACHINE CO.

(Est. 1890)

311 E. 47th St., NEW YORK

STOP Your Losses

with a Walton Tap Extractor

Remove that broken tap quickly—*without* injury to the threads.

About 90% of all taps break before they wear out. Each broken tap means stopped production, and the loss of a mechanic's valuable time. Decrease time spent on extracting broken taps and increase production. You can do it with a Walton Tap Extractor.

Made in three and four-flute styles.

A 60 day free trial will convince you

The Walton Company

302 Pearl St., Hartford, Conn.

Strand
FLEXIBLE SHAFTS

Flexible Shafts AND EQUIPMENTS

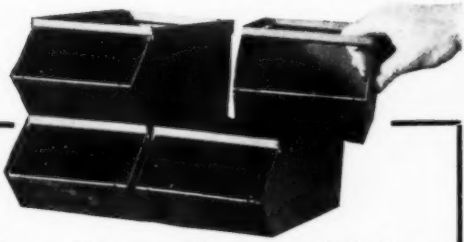
for Grinding, Polishing, Sanding, Drilling, Lathe-grinding, Screw-driving, Nut-setting and many other operations. Horizontal and vertical types. Quality machines for all industries.

New Catalog No. 26
Write for copy

Originators and Manufacturers

N. A. STRAND & CO.

5001 N. Lincoln St. Chicago, U. S. A.



Save Space, Time and Labor

Cut handling costs—eliminate waste motions—save time with Stackbins.

The contents of each individual Stackbin are always accessible without disturbing the bins above or below.

Write for Illustrated Circular

STACKBIN CORPORATION
PROVIDENCE, R. I.

Nicholson Expanding Mandrels

A mandrel is in reality an internal chuck. You wouldn't want to do without a lathe chuck; then why continue operating without expanding mandrels in your shop.

A letter or card will bring you complete information

W. H. Nicholson & Co.
117 Oregon St., Wilkes-Barre, Pa.

Joseph T. Ryerson & Son Expand

As so few companies are adding to their plant capacities these days, it is interesting to note the plant extensions and purchases of Joseph T. Ryerson & Son, Inc., of Boston, New York and Chicago.

ST. LOUIS PLANT EXTENSION

They already have underway an extensive addition to their St. Louis Steel-Service Plant. The new building will greatly increase facilities for storing and dispatching steel and allied products from that point. New, modern offices equipped with an air conditioning and cooling system will be included in the unit.

Plans for increased stocks are well under way. Many new products and sizes will be added, making immediately available to the St. Louis area the largest and most diversified stocks of steel and allied products.

In addition to this St. Louis unit, the Ryerson Company is serving nine other industrial centers with plants at Chicago, Milwaukee, Cincinnati, Detroit, Cleveland, Buffalo, Boston, Philadelphia and Jersey City.

PURCHASE BACON AND COMPANY

In addition to their present and contemplated plant extensions, the Ryerson Company has recently purchased the stock and good will of Bacon and Company, iron and steel company of Boston.

Bacon and Company was organized in 1868 by Joseph E. Bacon. The original company was located on Fulton Street in Boston. In 1869 the firm of Bacon and Brown was formed and about '73 moved from Fulton Street to Purchase Street and continued at this address until 1878. Mr. Bacon then retired from the firm of Bacon and Brown and formed Bacon and Company at 127 Oliver Street. Early in 1881 he built his new plant now located at 107-119 Oliver Street.

VOTES DIVIDEND OF 25 CENTS

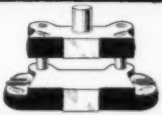
As a result of increased earnings this year, the board of directors of the Ryerson Company has ordered payment of 25 cents a share on the company's common stock. The last Company's dividend was 30 cents a share paid on Nov. 1, 1931.

It is estimated by the Company that for the last six months of 1933 sales will be at least 50 percent greater than they were in the same period of 1932. President Edward L. Ryerson Jr. looks forward to 1934 operations with reasonable optimism.

BETTER-MADE DIE SETS

BAUMBACH

AT LOWER COST



24 DIFFERENT STYLES

OVER 95,000 SIZES

STANDARDIZED DIE SETS

Semi-Steel

Drop Forged Steel

Send For Our New 208 Page Catalog

E. A. BAUMBACH MFG. CO.

1810 South Kilbourn Ave., CHICAGO, ILLINOIS

"ALNOR" Pyrometers

for the Hardening Furnace

MODEL 223

Inexpensive, yet accurate and durable, the ALNOR Pyrometer is used by large and small shops everywhere for heat-treating work. Because of its low first cost and compact size it is also very popular for soft metal melting, galvanizing, die casting, japanning, enameling, measuring flue gas temperatures and many other purposes.

Case diam. 4½ in.

Scale length 3½ in.

$40

With 10 ft. Alloy Wire connector block and a No. 8 gauge insulated thermo couple 24" long without protection tube

Write for descriptive folder

Illinois Testing Laboratories, Inc.

150 W. Austin Ave., Chicago, Ill.

Wood-Working Machinery

For a comprehensive display of new, up-to-date wood-working machinery and allied equipment, as well as lists of used and rebuilt machinery, consult

Wood-Working Machinery

It's a publication similar to this, but devoted to the advertising of wood-working machines, including saw mill equipment. A copy will be sent you free on application.

Hitchcock Publishing Co.

508 So. Dearborn St., Chicago, Ill.

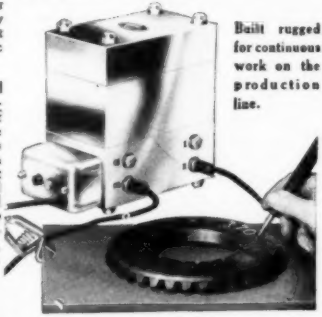
For Light and Heavy Etching

With 24 Stages of Control.

The LUMA Master Etchtool fulfills every marking requirement that can be done by an electric Etching outfit.

A Production Tool with as many as 24 different stages or varieties of control for regulating the depth of marking, this tool can be used for extra light marking of machinest scales, micrometers and fine tools or can be used or *extra heavy and deep* marking of rough and unfinished iron, cast iron, forgings, steel plates, etc.

Send for circular giving complete data and details of this modern Instrument.



Built rugged for continuous work on the production line.

LUMA ELECTRIC EQUIPMENT CO.

DEPT. H.—Main P. O. Box No. 132—TOLEDO, OHIO

IT CAN "TAKE IT"

IT was the bull-dozing strength of the RIGID that first won its popularity among users. When other wrenches smashed up on a tough job, RIGID came thru without a scratch.

But it has 7 other good points: full-floating hook jaw; pipe scale on jaw; replaceable heel jaw; instant grip and let-go, no slip, no locking; easy turning adjusting nut in open housing; double strength I-beam handle; handy hang-up hole. Try one—see for yourself. Ask your Jobber.

The Ridge Tool Co., Elyria, O., U.S.A.

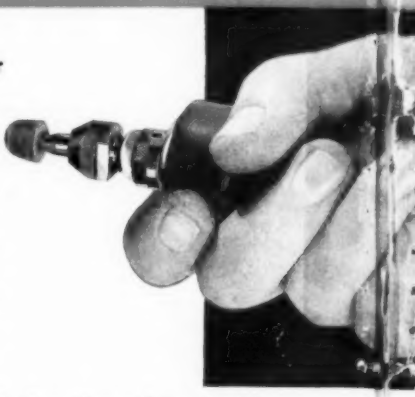
RIGID

PIPE TOOLS

HAND-EE *Grinders*

Model B
Hand-ee Hi-Power

The new Grinder of many adaptations. Compact, portable — easiest of all Grinders to handle even for new and inexperienced help. Weighs only 3 pounds. Plugs into any light socket. Universal motor A. C., or D. C. 100 V. speed 17,000 R. P. M. without load. Complete with 3 wheels (shapes as specified) in a special container with wrenches and dressing stone. ONLY $35.00.



When Hand-ee Grinders Come Into the Shop— Costs Go Down Quick!

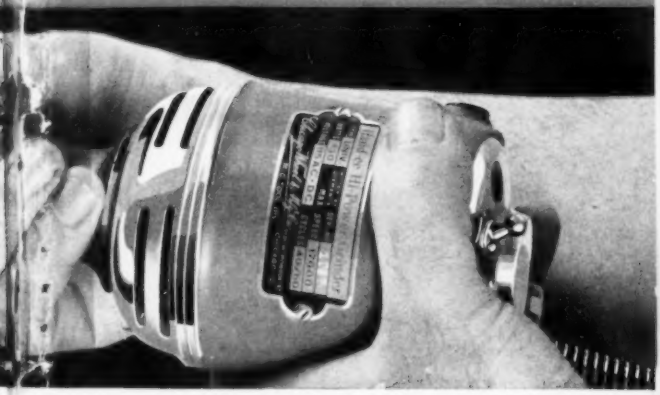
Why continue old-fashioned time-consuming methods, when Hand-ee Grinders offer a definite short cut to production savings and insure better workmanship at the same time?

Hand-ees are solving grinding problems in many and varied industries. They will do the same for you. They handle a wider range of work than any other grinders made, and the worker takes his Hand-ee right to the job. No waste motion—no loss of time—work speeds up—costs go down.

Model A Hand-ee

Weighs only 1 pound. A modern Grinder for shop or tool kit. Grinds where files won't reach. Universal motor operates on A. C., or D. C. 110 V. Speed 13,000 R. P. M., without load. Complete with 3 wheels. ONLY $11.50.

Cut Production Costs!



"Chicago" Grinding Wheels, Mounted on Steel Shanks, Render Outstanding Service to Industry

"CHICAGO" WHEELS AND HAND-EE GRINDERS—You can't beat this combination in line production work—in pattern, die and mold making—in sharpening taps, dies and other tools—in grinding hard-to-get-at places. With more than 100 shapes available—and a full range of abrasives, any and every grinding operation is handled with ease and speed. By permanent mounting on steel shanks, Chicago Wheels are quicky slipped in the chuck of a Hand-ee Grinder and ready to go—No clumsy collars—no screws, or nuts to adjust.

Ask your supply house for a demonstration of Hand-ee Grinders or accept our 5-day trial offer.

CHICAGO WHEEL & MFG. COMPANY

Grinding Wheel Engineers Since 1895 116 S. Aberdeen St., Chicago, Ill.

CHICAGO WHEEL & MFG. COMPANY 116 S. Aberdeen St., CHICAGO, ILL.

Send prepaid on your 5-day trial offer—

☐ One Hand-ee Model A Grinder with the 3 wheel shapes checked above $11.50

☐ One Hand-ee Model B Grinder with the 3 wheel shapes checked above $35.00

☐ Send free booklet. ☐ Check enclosed. ☐ Send C. O. D.

Classified Finding Index

Arbor Presses
Atlas Press Co., Kalamazoo, Mich.
Wilson K. R., Buffalo, N. Y.

Arbors, Solid
W. H. Nicholson & Co., Wilkes-Barre, Pa.

Balancing Ways
Ander on Bros. Mfg. Co., Rockford, Ill.
Sundstrand Machine Tool Co., Rockford, Ill.

Band Saw Machines, for Metal
Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago

Bearings, Ball
Boston Gear Works, Inc., North Quincy, Mass.

Bending Machines, Hand and Power
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Lewthwaite Mchc. Co., T.H.311E.47th., N.Y.

Bins
Stackbin Corp., Providence, R. I.

Bolt and Nut Machinery
Foote-Burt Co., Cleveland, O.

Bushings, Steel
Acme Industrial Co., 419 N. Carpenter St., Chicago, Ill.

Bushings, Jig
Acme Industrial Co., 419 N. Carpenter St., Chicago, Ill.

Centering Machines
Sundstrand Machine Tool Co., Rockford, Ill

Chain Drives
Boston Gear Works, Inc., North Quincy, Mass.
Cullman Wheel Co., 1359 Altgeld St., Chgo.

Chains, Silent and Roller
Cullman Wheel Co., 1359 Altgeld St., Chgo.

Chamfering Machines, Automatic
Grant Mfg. & Mchc. Co., Bridgeport, Conn.

Chucks, Automatic
Procunier Safety Chuck Co., 14 S. Clinton St., Chicago

Chucks, Collet
Procunier Safety Chuck Co., 14 S. Clinton St., Chicago

Chucks, Drill and Tap
Procunier Safety Chuck Co., 14 S. Clinton St., Chicago

Chucks, Quick Change
Procunier Safety Chuck Co., 14 So. Clinton St., Chicago

Chucks, Ring Wheel Grinder
Graham Manufacturing Co., Providence, R. I.

Cold Saws
Burke Machine Tool Co., Conneaut, Ohio

Collets
Hardinge Brothers, Inc., Elmira, N. Y.

Contract Work Wanted
Burke Machine Tool Co., Conneaut, O.

Couplings, Flexible
W. H. Nicholson & Co., Wilkes-Barre, Pa.

Couplings, Shaft
W. H. Nicholson & Co., Wilkes-Barre, Pa.

Demagnetizers
Luma Electric Equipment Co., Toledo, Ohio

Dies, Blank and Forming
American Tool Works, Inc., Hartford, Conn.

Die Sets
Baumbach Mfg. Co., E. A., 1812 So. Kilbourne Ave., Chicago

Dividing Heads
Wm. Carroll & Son, Cincinnati, Ohio

Dowel Pins, Steel
Acme Industrial Co., 419 N. Carpenter St., Chicago, Ill.

Drilling Attachments, High Speed
Graham Manufacturing Co., Providence, R. I.

Drilling Machines, Multiple Spindle
Foote-Burt Co., Cleveland, O.

Drilling Machines, Portable Electric
Strand Co., N. A., 5001 N. Lincoln St., Chgo

Drilling Machines, Sensitive
Burke Machine Tool Co., Conneaut, Oh
Foote-Burt Co., Cleveland, O.

Drilling Machines, Vertical
Foote-Burt Co., Cleveland, O.

Classified Finding Index

Drives, Lathe
Cullman Wheel Co., 1359 Altgeld St., Chgo.

Electrical Instruments
Illinois Testing Laboratories, Inc., 150 W. Austin Ave., Chicago

Emery Wheel Dressers and Cutters
Western Tool & Mfg. Co., Springfield, O.

Etching Machines, Electric
Luma Electric Equipment Co., Toledo, Ohio

Experimental Work
American Tool Works, Inc., Hartford, Conn.

Furniture, Machine Shop
Western Tool & Mfg. Co., Springfield, O.

Gages, Pin, Plug, Ring and Snap
American Tool Works, Inc., Hartford, Conn.

Gears
Abart Gear & Machine Co., Cicero, Ill.
Boston Gear Works Inc., North Quincy, Mass.

Grinder, Electric
Chicago Wheel & Mfg. Co., M. C. Tool Div., 116 So. Aberdeen St., Chicago, Ill.

Grinder, High Speed
Chicago Wheel & Mfg. Co., M.C. Tool Div., 116 S. Aberdeen St., Chicago, Ill.

Grinder, Hand
Chicago Wheel & Mfg. Co., M.C. Tool Div., 116 S. Aberdeen St., Chicago, Ill.

Grinding Machines, Belt
Walls Sales Corp., 96 Warren St., New York

Grinding Machines, Cutter, Reamer and Tool
National Machine Tool Co., Racine, Wis.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Cylindrical
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Die
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Internal
National Machine Tool Co., Racine, Wis.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Portable Electric
Chicago Wheel & Mfg. Co., M.C. Tool Div., 116 S. Aberdeen St., Chicago, Ill.
National Machine Tool Co., Racine, Wis.
Strand Co., N. A., 5001 N. Lincoln St., Chicago

Grinding Machines Pulley Finishing
Graham Manufacturing Co., Providence, R.I.

Grinding Machines, Ring Wheel
Graham Manufacturing Co., Providence, R.I.

Grinding Machines, Surface
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Universal
Thompson Grinder Co., Springfield, Ohio

Grinding Whee's
Chicago Wheel & Mfg. Co., M.C. Tool Div., 116 S. Aberdeen St., Chicago, Ill.

G inding Wheels, Mounted
Chicago Wheel & Mfg. Co., M.C. Tool Div., 116 S. Aberdeen St., Chicago, Ill.

Grinding Wheels On Shanks
Chicago Wheel & Mfg. Co., M.C. Tool Div., 116 S. Aberdeen St., Chicago, Ill.

Hack Saw Blades
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago

Hack Saw Machines
Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago

Jigs and Fixtures
American Tool Works, Inc., Hartford, Conn.

Knurls and Holders, for Turrets
Graham Manufactoring Co., Providence, R.I.

Lathe Drives
Cullman Wheel Co., 1359 Altgeld St., Chgo.

Lathes, Bench
Atlas Press Co., Kalamazoo, Mich.

Lathes, Engine
Wm. Carroll & Son, Cincinnati, Ohio

Lathes, Manufacturing
Sundstrand Machine Tool Co., Rockford, Ill.

Classified Finding Index

Leader Pins, Steel
Acme Industrial Co., 419 N. Carpenter St., Chicago, Ill.

Mandrels, Expanding
W. H. Nicholson & Co., Wilkes-Barre, Pa.
Western Tool & Mfg. Co., Springfield, O.

Mandrels, Solid
W. H. Nicholson & Co., Wilkes-Barre, Pa.

Milling Attachments
Burke Machine Tool Co., Conneaut, Ohio

Milling Machines, Bench
Burke Machine Tool Co., Conneaut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.

Milling Machines, Hand
Burke Machine Tool Co., Conneaut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.

Milling Machines, Plain
Burke Machine Tool Co., Conneaut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.

Oil, Cutting
Sun Oil Co., Philadelphia, Pa.

Oil, Lubricating
Sun Oil Co., Philadelphia, Pa.

Pins, Leader And Dowel
Acme Industrial Co., 419 N. Carpenter St., Chicago, Ill.
Baumbach Mfg. Co., E. A., 1812 So. Kilbourne Ave., Chicago

Pipe Cutters
Ridge Tool Co., Elyria, Ohio

Pipe Vises
Ridge Tool Co., Elyria, Ohio

Pipe Wrenches
Ridge Tool Co., Elyria, Ohio

Presses, Arbor
Atlas Press Co., Kalamazoo, Mich.
W. H. Nicholson & Co., Wilkes-Barre, Pa.
Wilson, H. K., Buffalo, N. Y.

Presses, Punch
Lewthwaite Mche. Co., T. H., 311 E. 47th., N. Y.

Punch Press Feeds
Wittek Mfg. Co., 4309 W. 24th Place, Chgo.

Punch, Shear and Bender, Hand
Armstrong Blum Mfg. Co., 341 N. Francisco Ave., Chicago

Punches, Hand
Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
Lewthwaite Mche. Co., T. H., 311 E. 47th, New York
Whitney Metal Tool Co., Rockford, Ill.

Punches and Dies
Lewthwaite Mche. Co., T. H., 311 E. 47th., N. Y.

Pyrometers
Illinois Testing Laboratories, Inc., 150 W. Austin Ave., Chicago

Pyrometers, Portable & Stationary
Illinois Testing Laboratories, Inc., 150 W. Austin Ave., Chicago, Ill.

Reamer Holders
W. H. Nicholson & Co., Wilkes-Barre, Pa.

Riveters, Multiple Spindle
Grant Mfg. & Mche. Co., Bridgeport, Conn.

Riveters, Pneumatic
Grant Mfg. & Mche. Co., Bridgeport, Conn.

Riveting Machines
Grant Mfg. & Mche. Co., Bridgeport, Conn.

Rod Cutters
Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
Lewthwaite Mche. Co., T. H., 311 E. 47th, N. Y.

Scraping Machines
Anderson Bros. Mfg. Co., Rockford, Ill.

Shafts, Flexible
Strand Co., N. A., 5001 N. Lincoln St., Chgo.

Shaping Machines
Osborne & Sexton Machy. Co., Columbus, O.

Shears, Hand
Armstrong-Blum Mfg. Co. 341 N. Francisco Av., Chicago
Lewthwaite Machine Co., T. H., 311 E. 47th St., New York
Whitney Metal Tool Co., Rockford, Ill.

Shears, Slitting
National Machine Tool Co., Racine, Wis.

Special Tools and Machinery
American Tool Works, Inc., Hartford, Conn.

Speed Reducers
Abart Gear & Machine Co., Cicero, Ill.
Boston Gear Works, Inc., North Quincy, Mass.
Cullman Wheel Co., 1359 Altgeld St., Chgo.

Spot Welding Machines, Speed.
Eisler Electric Corporation, Newark, N. J.

Sprockets
Boston Gear Wks. Inc., North Quincy, Mass.
Cullman Wheel Co., 1359 Altgeld St., Chgo.

Classified Finding Index

Straightening Machines
Whitney Metal Tool Co., Rockford, Ill.

Stud Setters
Procunier Safety Chuck Co., 14 S. Clinton St., Chicago

Tap Extractors
Walton Co., Hartford, Conn.

Tap Holders
Procunier Safety Chuck Co., 14 S. Clinton St., Chicago

Tapping Attachments
Procunier Safety Chuck Co., 14 S. Clinton St., Chicago, Ill.

Tapping Machines and Attachments
Burke Machine Tool Co., Conneaut, Ohio
Procunier Safety Chuck Co., 14 So. Clinton St., Chicago, Ill.
Whitney Metal Tool Co., Rockford, Ill.

Thermometers, Resistance Type
Illinois Testing Laboratories, Inc., 159 West Austin Ave., Chicago, Ill.

Threading Machines, Automatic, Stud
Grant Mfg. & Mche. Co., Bridgeport, Conn.

Threading Tools
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago
Ridge Tool Co., Elyria, Ohio.

Tool Holders
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago
Western Tool & Mfg. Co., Springfield, O.

Tools, Boring
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago

Tools, Lathe and Planer
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago

Tools, Machinists'
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago

Tube Flanging Machines
Grant Mfg. & Mche. Co., Bridgeport, Conn.

Universal Joints
American Tool Works, Inc., Hartford, Conn.
Boston Gear Works Inc., Norfolk Downs, Mass.

Used and Rebuilt Machinery
American Mfg. Concern, Kalamazoo, Mich.
Bernstein, Geo. M., 221 N. Elizabeth St., Chicago, Ill.
Bieser Mfg. & Mchy. Co., Springfield Ill.
Bradly Mchy. Co., Detroit, Mich.
Brotherhood, Percy M. & Son, 114-118 Liberty St., New York City
Brown Machinery Co., St. Louis, Mo.
Cincinnati Mchy. & Supply Co., Cincinnati, O.
Eastern Machinery Co., Cincinnati, O.
Elyria Belting & Mchy. Co., Elyria, Ohio.
Emerman & Co., Louis E., 1761 Elston Ave., Chicago, Ill.
Easley Machinery Co., E. L., 825 Rees St., Chicago, Ill.

Used and Rebuilt Machinery—Cont.
Gouse, James, J. Boston, Mass.
Gockel, A. P., Cleveland, Ohio
Hill, Clarke & Co., 645 W. Washington Blvd., Chicago, Ill.
Interstate Mchy. Co., 130 S. Clinton, Chgo
Iroquois Machinery Co., Buffalo, N. Y.
Johnson & Sons Machinery Co., Wm. C., St. Louis, Mo.
Jones Machine Tool Co., Cincinnati, Ohio
Kennard-Rafkin Mchy. Corp., Jersey City, N. J.
Klauber Mchy. Co., E. L., St. Louis, Mo.
Lucas & Son, J. L., Bridgeport, Conn.
McDonald Machinery Co., St. Louis
Maplewood Machinery Co., 2634 Fullerton Ave., Chicago, Ill.
Marr-Galbreath Mchy. Co., Pittsburgh, Pa
Midwest Equipment Co., 625 W. Lake St., Chicago, Ill.
Mid-West Machine Tool & Supply Company, Davenport, Iowa
Miles Machinery Co., Saginaw, W. S., Mich
Morey & Co., 45 Mill St., Astoria, Long Island, N. Y.
O'Brien Machinery Co., Philadelphia
Oviatt & Co., D. C., Cleveland, Ohio
Osborne & Sexton Machy. Co., Columbus, O
Railway Car & Equipt. Co., East Chgo., Ind.
Reliance Machinery Sales Co., Pittsburgh, Pa.
Rentschler & Co., J. P., 6122 N. Maplewood Ave., Chicago, Ill.
Russell Machine Co., Pittsburgh, Pa.
Scott-Bassbach Mchy. Co., 4607 W. 20th St., Chicago
Segal Machinery Co., 899 W. Lake St., Chicago, Ill.
Simmons Machine Tool Corp., Albany, N. Y.
Stegeman Machinery Co., Milwaukee, Wis.
Strong, Carlisle & Hammond Co., Cleveland, Ohio
Sun Machinery Co., 23 Van Buren Street, Newark, N. J.
Temps Bros. Motor Co., Brooklyn, N. Y.
United Machinery & Supply Co., St. Louis, Mo.
Victor Machinery Co., 128 S. Clinton Street, Chicago, Ill.
Victor Machinery Exchange, 251 Center St., New York City
West Penn Machinery Co., Pittsburgh, Pa.
White Machy. Co., A. D., 108 N. Jefferson St., Chicago
Wigglesworth Mchy. Co., Cambridge, Mass.

Vises, Drilling Machine
Armstrong Blum Mfg. Co., 341 N. Francisco Av., Chicago
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago
Graham Manufacturing Co., Providence, R. I.
Martin Tool & Die Works, J. E., Springfield, O.

Vises, Machinists'
Western Tool & Mfg. Co., Springfield, O.

Vises, Milling Machine
Graham Manufacturing Co., Providence, R. I.

Vises, Shaper
Graham Manufacturing Co., Providence, R. I.

Welding Machines, Electric Spot
Eisler Electric Corporation, Newark, N. J.

Welding Machines, Resistance
Eisler Electric Corporation, Newark, N. J.

Wheels, Grinding
Chicago Wheel & Mfg. Co. M. C. Tool Div., 116 S. Aberdeen St., Chicago, Ill.

Used and Rebuilt Machinery Section

Lists of Used and Rebuilt Machinery, either For Sale, Wanted, or For Exchange, set in uniform style, will be published in the Classified Section at the rate of 60 cents a line across the page, each issue, plus $3.00 for name and address. Minimum charge, $6.00. No display permitted.

Write directly to those offering the machines for sale, for prices and full descriptions. If what you seek is not advertised, use the blank enclosed to make known your wants in either new or used machinery and the publisher will pass them along to the advertisers.

FOR SALE BY

James J. Gouse, Inc. - - 137 Oliver Street, Boston, Mass.

Drill, Leland-Gifford, 4 sp. No. 2 motor spindle, 220/3/60 pr. f. bk. gd..$1050.
Press, Bliss horning, No. 41, motor drive, 3/60/220..... 450.
Press, Farrel Foundry hvy. duty blanking, bk. gd. wt. 18000 lbs. str. 1½" 950.
Surface grinder, Diamond No. 2 working range 24"x12"x12"..... 350.

FOR SALE BY

Segal Machinery Co. - - 808 W. Lake St., Chicago, Ill.

Brake, 8' Dreis & K, 18 ga., forms.
Lathe, 20x14 Monarch, g h., q. c. g., t. a.
Shear, 36" Niagara, ft. pwr., 16 ga.
Shear, 62" Niagara, ft. pwr., 18 ga.
Compressor, 118 cu. ft. Gardner twin cylinder, motor, tank unloader
Compressor, Ingersoll-Rand 2-stage, 9x12 and 14x12 cylinders.
Converter, 220 k. w. West'hse. v. d. c., 800 amp. a. c., 3 ph., 60 cy., 1200 rpm.

FOR SALE BY

Mid-West Machine Tool & Supply Co., Davenport, Iowa

Automatics, No. 00 B. & S.
Drill, Allen 6 spindle, h. s.
Grinder, 10"x36" Norton.
Grinder, No. 10 B. & S. ext.
Hobbers, Nos. 3, 12-B & C.
Lathe, No. 9 LeBlond multi-cut.
Millers, Nos. 1 & 2 Brown & Sharpe.
Radials, 3' Cincinnati Bickford.
Radial, 4' American sensitive.
Turret lathe, Nos. 2 & 6 Warner & S.

FOR SALE BY

Percy M. Brotherhood & Son 114-118 Liberty Str, N. Y. City

Boring mills, 10' Niles; 72" Sellers; 44"-54"-61" Bullard Maxi-Mills.
Lathes, 72"x40' Putnam; 72"x50' Pond.
Forging Machines. Press Brakes, Shears, Bending Rolls, Planers, Shapers, Grinders, Milling Machines all sizes.
All Selected Tools.

FOR SALE BY

Stegeman Machinery Co., 610 W. Michigan Str., Milwaukee, Wis.

Press, 1000-ton No. 27 Bliss knuckle joint.
Presses, 3-No. 77½ Bliss tie rod s. s. double geared.
Press, No. 31109 Hamilton tie rod s. s. single geared.
Press, No. 75½ Bliss tie rod s. s.
Press, No. 165 Toledo toggle drawing.

We have many desirable machines available. Send your inquiries.

FOR SALE BY

West Penn Machinery Company

1208 House Building, - - - Pittsburgh, Pa.

Automatic, No. 0 Brown & S. b. d.
Air compressors, 30 to 2500 cu. ft.
Blower, Spencer turbine, 1800 c. f.
Bolt cutter, 2" Acme, sgl. hd., b. d.
Boilers, 10 h. p. up.
Boring mill, 24" Bullard, side head.
Boring mill, 36" Bullard, side head.
Boring mill, 72" Niles, 2 heads, m.d.
Boring mill, horiz. 6½" Niles. fl. type.
Brake, box & pan, 60"x10 ga. D.&K.
Brake, hand, 8'x16 ga. D. & K.
Brake, 5' press type, 10 gauge.
Brake, 8' D. & K. 10 ga. box & pan.
Brake, 8' D. & K. ¼", b. d. No. 186.
Brake, 10' Chicago, Leaf Type. 10 ga.
Brake, 10' Dreis & K. ¼", m. d.
Bulldozers, Nos. 2, 4, 6, 28, 29 & 30.
Cranes, Electric Traveling.
Crane, elec. 50 ton Alliance, 50' span.
Crusher, Jeffery 24"x24".
Drill, mult. 4-spdl. Avey, b. d.
Drill, radial, 2½' Fosdick, t. a., b. d.
Drill, radial, 3½' Cin-Bickford, s.p.d.
Drill, rad., 4' American, mtr. on arm
Drill, radial, 4' Prentice, t. a., b. d.
Drill, rad., 5' Cin-Bickford, t.a., s.p.d.
Drill, radial, 6' Dreses, s. p. d.
Drill, radi., 6' American, t. a., s. p. d.
Drill, upright 10" to 36".
Drive, Toledo pwr., a.c., cap. 6" pipe
Engine, gas, 20 h.p. Bessemer, horiz.
Flanger, McCabe, ¼" capacity, dies.
Forge, No. 80½ Champion, 40x30.
Forging mach. 1½" Acme, st fr., b.d.
Gear cutters, 11", 24" & 36" Gleason.
Gear cutter, spur, 36"x10" Newark.
Gear hobber, No. 4 Sch. & Sch. 118".
Grinder, centerless. No. 4-C Detroit.
Grinder, die, No. 1 Bridgeport, b.b.
Grinders, 8" Black & D., d. e., m. d.
Grinder, rad., 14" M. & D., m. d.
Grinder, surface, No. 16 Blanchard.
Grinder, surface, No. 2 Reid, b. d.
Grinder, tool & cut., No. 2 Walker.
Generators, eng., oil, gas, belt & mtr.
Hammer, Blacker, power, 35-lbs.
Hammer, 80-lb. Bradley, cush. helve.
Hammer, 250-lb. Little Giant, b. d.
Hammers, Nos. 2-B, 3-B, 4-B, Nazel.
Hammers, steam, 600 lb. to 6000 lbs.
Header, No. 2 Wat. Far., o. d., tr. st.
Jacks, 35-ton Barrett, ball bearing.
Keyseater, No. 0 & 3 Baker.
Lathe, 7"x30" Dalton, b. g., m. d.
Lathe, 14"x12' Lodge & S., g.h., m.d.
Lathe, 16"x6' Le Blond, q. c. g., d.b.g.
Lathe, 16"x6' Monarch, g.h., qcg., m.d.
Lathe, 18"x10' Reed-Prent. g.h.s.p.d.
Lathe, 24"x16' Bridgeford, g.hd.m.d.
Lathe, 26"x21' 6" Bridgeford, g. h.
Lathe, 48"x26' Bridgeford, g.hd m.d.
Lathe, turret, No. 6 Warner & S.
Lathe, turret, 18" Libby, m. d.
Lathe, turret, 24" Steinle, 6¾" hole.
Lathe, tur., 28" Gisholt, 9" hole, m.d.
Lathe, turret, 34" Gisholt, b. d.
Lysholm tables, 72"x30'.
Miller, duplex, 24" Cincinnati, auto.
Miller, pl., No. 5 Cin., rect. overarm.
Miller, universal, No. 3 Le Blond.
Motors, a. c. & d. c.
Pipe machine, 2' Landis, belt drive.
Pipe mches., 4" & 6" Oster, a.c., m.d.
Pipe mchs., 8" Oster, sgl. pul. drive.
Planer, 30"x30"x10' Woodward & P.
Planer, 48"x48"x18' Cinti, belt drive.
Planer, o. s., 36"x36"x16' D. & H.
Planer, o.s., 48"x48"x16' D. & H. m.d.
Press, auto., McDonald, No. 31-EG.
Press, No. 9 Bliss inclinable, foot.
Press, o.b.i. No. 4 Niagara 3" st., b.d.
Presses, o b.i. Bliss, Nos. 18, 19, 20.
Press, hyd., 400-ton Roberton, m. d.
Press, hyd 100-ton Watson-Stillman.
Press, No. 78½ Bliss, t. r., 10" str.
Press, No. 96-A Toledo, d. c. 5" str.
Press, screw, No. 87 Niagara.
Press, wheel, 200-ton Lourie.
Punch, hand, Shatz, bar and angle.
Punch & s., No. 6 L. & A. ¾" thru ¼"
Punch, EF Cleveland, 36" thrt., 1⅛"-1"
Punch, multiple, No. 5 H. & J. 10'.
Riveters, air, hammer, spinning.
Rolls, bending, 12'x¾" H. & J. d. e.
Roller, thread, Nos. 30, 40, 50, 60 W.-F.
Saws, band, 26 and 32" Fay & Egan.
Saw, cold, 48" Newton, m. d.
Saw, friction, Nos. 2 & 3 Ryerson.
Saw, hack, Racine Jr. 4"x4", m. d.
Saw, hack, No. 5 Marvel, 6"x6".
Saw, hack, No. 4 Robertson, 8"x8".
Saws, shaping, 6x6" Peerless.
Screw mchs. Nos. 52, 53, 55 Nat. A.
Shapers, 16", 20", 24" & 36" G. & E.
Shaper, 48" Morton draw cut, m. d.
Shear, angle, 6"x6"x1" H. & J.
Shears, alligator, 1½", 2", 3" & 4".
Shear, bevel, Lennox ¾", b. d.
Shear, circle, No. 13" Niagara, b. d.
Shears, foot, 30" and 36" Pexto.
Shear, guil. No. 5 H. & J. 4" sq., m.d.
Shear, rot. No. 114 Lennox ¾".
Shear, squaring 8'x14 ga. Ohl, b. d.
Shear, 12' x ¼" Wheeling, 21" gap.
Slitter, gang, No. 2 Wat-Farrell, b.d.
Slotter, 18" Dill, motor drive.
Straightner, 72" Newbold, 9-roll m.d.
Straightner, 1½ & 4" round Abramson.
St'r. & sh., No. 1026 B. & J. 9"x3/16"
Straight'r & sh., Shuester, 14x1/16".
Swaging mche., No. 8-A Standard.
Testing mche., Brinnell hardness.
Tumbling barrel, 18"x36", b. d.
Upsetters, 1" to 6".
Welders, spot and butt.
Woodworking Machinery.

FOR SALE BY

The Jones Machine Tool Co., Front & Pike Sts., Cincinnati, Ohio

Bolt cutter, 1½" Landis, single spdl.
Bolt cutter, 1½" Landis, dbl. spdl.
Boring mill, No 32 G. & L., s. p. dr.
Drill, 6 sp. Barnes C. Back, p. f.
Gear cutter, No. 13 B.& S., bevel& sp.
Gear hobber, 12 Adams, Farwell.
Gear hobber, 12" Barber-Colman.
Grinder, No. 1 Diamond surf. 12x24"
Grinders, disc, various sizes.
Lathe, 42"x30" Bridgeford, g.h., m.d.
Lathes, shapers & planers, all sizes.
Hydraulic wheel press, 350 ton.
Milling machines, all sizes.
Nibbler, No. 1 Gray 3/16" capacity.
Radial drills, various types.
Shear, 8' L. & A. 3/16" cap., 18" gap.
Shear, 10' Poorman 14 gauge.

Shear, 62" Niagara 10 ga. 15" gap.
Shear, 37" Toledo 16 ga. 15" gap.
Welder, 20 k. w. Gibb spot.
Welder, 35 k. w. Federal spot.
Upsetters, 2" Ajax, belt drive.

PRESSES

No. 1, Bliss, toggle.
No. 92 B Toledo 38" dbl. crank, grd.
No. 91C Toledo 36" dbl. crank, plain.
No. 40B Robinson 42" dbl crk ,grd.
No. 43 Robinson 46" dbl. crank, grd.
No. 5 Toledo, plain, o. b. incl.
No. 8 Toledo, back geared, incl.

PRESS-BRAKES

60" V. K. & V., 16 ga., motor drive.
120" Obl. 10 ga. belt drive.
120" Bertsch, 3/16", motor drive.

We have a large stock—Send for new list

FOR SALE BY

J. L. Lucas & Son, Inc., - - - 3 Fox St., Bridgeport, Conn.

Automatic, No. 0 Brown & Sharpe high speed.
Automatics, No. 00, No. 0 and No. 2 Brown & Sharpe standard speed.
Automatics, 2¾", 3-5/16" National-Acme Model C
Automatics, 9/16" Gridley Model G, 7/16" and 1¼" Model F.
Automatics, ¾" Davenport No 2, motor drive.
Boring mill, 24" Universal horizontal, 31 Lucas.
Boring mills, 24" and 36" Bullard rapid production, New Era.
Boring, mill 61" Bullard Maxi-mill.
Die headers, solid, No. 2 Waterbury-Farrel, double stroke, ¾".
Die headers, solid, No. 2½, No. 3 & No. 3½ Waterbury-Farrel, double stroke.
Die header, solid, No. 1 Manville, double stroke, ⅝".
Drill presses, Allen high speed, 1, 2, 3, and 6 spindle.
Grinder, 84" Diamond face, segment wheel.
Grinder, 14" Pratt & Whitney surface.
Grinders, No. 22 Heald rotary surface, (2).
Grinders, No. 2 Brown & Sharpe surface, motor drive, (2).
Grinders, No. 60 Heald cylinder, (3), No. 50 and 70 (3).
Hammers, 50, 800 and 100 lb. Standard automatic drop.
Miller, Nos. 3 and 4 Cincinnati high power plain.
Miller, No. 2 Brown & Sharpe universal.
Miller, Nos. 1½A, 2A and 3A Brown & Sharpe universal.
Miller, No. 4 Cincinnati universal, complete.
Miller, No. 3 Cincinnati vertical, slotted nose.
Planer, 42"x42"x10' Cleveland, openside, like new.
Press, No. 23 Bliss coining, 250 ton, late type.
Press, No. 3B Bliss double crank, geared, 42" uprights.
Presses, P2, P3 and P4 Ferracute punch, very low price.
Radial, 4' Cincinnati-Bickford, gear box.
Rivet drilling machine, Waterbury-Farrel.
Rolling mills, 8"x12" Mossberg-Granville; 10"x16" Blake & Johnson.
Screw slotters, No. 0 & No. 2 Waterbury-Farrel; 2C Manville.
Shapers, 16" and 24" Gould & Eberhardt, motor drive, (2).
Shaper, 24" American, motor drive.
Thread rollers, No. 1B, No. 2, No. 3 and No. 4B Manville.
Turret lathes, No. 2A Warner & Swasey; 2B Foster.
Turret lathe, 24", 36" and 42" Bullard New Era, vertical.
Wire straightening and cutting off machines, ½" Nilson; ½" Shuster.

Just write or wire for complete details. Let us know, too, any other machines you need—or machines you have for sale.

FOR SALE BY

McDonald Machinery Co., **1535 N. Broadway, St. Louis, Mo.**

Bolt mchs., Landis & Acme 1½".
Boring mill, Lucas & Bul. hor. & vert.
Brake, D. & K. 6' 10 gauge, power'
Drills, Cin-Bickford 3' & 3½' radials.
Drill, Moline 32-spindle hole hog.
Gear hobber, G. & E. 24" & 60".
Grinders, B. & S. No. 2 surf. & univ
Grinder, Cincinnati 14"x72" plain.
Keyseaters, M. & M. No. 2.
Lathes, Hendey 20"x10', 13"x6' & 20"x12' grd hd.: 50 others in stock.
Milling machines, B. & S. No 5, vert.
Milling machines, Van Norman No. 2 duplex; B. & S. No. 1½ Cinc. No. 1½, Hendey No. 1-B, Kemp. No. 3; Ohio No. 29 B. & S. No. 2-A single pulley drive, all universal; Kemp, No. 1, LeBlond No. 3-H.; B. & S. No. 3-H, s. p. d., Cleveland No. 2, s. p. d., all plain, Cincinnati 12" Mfg.
Pipe mches., Curtis, B. & K. 12" m. d.
Punch press, d. c. grd., 79" between uprights, 5" stroke, wt. 38,000 lbs.
Screw machines, Foster No. 5, gr. hd.
Shapers, G. & E., S. & M., Cin., Ohio, American, Steptoe, Queen City, 12", 16", 18", 20", 24" and 26".
Square shears, Bertsch 10' 16 ga.
Turret lathes, W. & S. No. 2A univ.

FOR SALE BY

Marr-Galbreath Machinery Co., **58 Water St., Pittsburgh, Pa.**

Air compressor, 10x10" Chgo., n.s.b.
Air comp., 15-21 cu ft., 175 lb., m. d.
Air receivers, 4'x18", 150 lb., (10).
Angle roll, No. 3 Niagara, 1½x3/16".
Boiler, htg., No. 4-GS-28 Amer., Gas.
Bolt cutter, ¾" Geometric, m. d.
Boring mill, horiz. 6¾" bar, Niles.
Boring mill, 30" Colburn.
Boring mill, 72" Cincinnatir. t. (95%).
Brake, 8'x14 ga. D. & K., belt.
Brake, 48"x18 ga., P.S. & W., hand.
Brake 10' Keene toggle, 16 gauge.
Brake, 10'x18 ga. D. & K. hand.
Broaching mch. Nos. 1 & 3 LaPointe
Bulldozer, No. 4 W. W., motor dr.
Crimping roll, 6¾' Robinson, 16 ga.
Drills, 20" b. g., p. f.
Drill, 26" Rockford, g. f. taper att.
Drill, 25" Snyder, s. h., b. g.
Drill, 26" Prentice, b. g., s. h., m. d.
Drill, radial, 3' Dreses, 3' Cinn.-B.
Engine, Diesel, 200 h. p. horizontal.
Forging mchs., 1¾", 3" & 3½" (steel).
Grinder, 12"x96" Landis pl., for m. d.
Grinder, No. 1½ Landis universal.
Grinder, universal t. & c. Nos. 2 & 3.
Hack saw, 13"x16" Peerless, b. d.
Hammer, No. 2-B Nazel, m. d.
Hammer, 40 lb. Bradley, H. H.
Hammer, 100 lb. Bradley, U. S.
Hammer, 800 lb. Erie stm. forg., s.f.
Hammer, 1000 lb. Chbg., steam drop.
Hoists, chain, 1 to 8-tons capacity.
Jointer, 8" F. & E., rd. hd.
Keyseater, 2 M. & M., m. d.
Keyseater, 24"x2½" Morton.
Lathe, 13"x5' & 15"x6' So. Bend.
Lathe, 13"x6' Sebastion g. h., a.c.m.
Lathe, 14"x6' P & W. pan, d-in., t. a.
Lathe, 18"x12' Hendey, t. b.; t. a.
Lathe, 19"x10' LeBlond, q. c. g., t.a.
Lathe, 22"x10' 10" Greaves-K., q.c.g.
Lathe, 24"x12' Pgh., q. c. g., chuck.
Lathe, 24"x16' S. & B., chuck, t. a.
Lathe, 48"x26' geared head, m. d.
Millers, hand, Burke & Rockford.
Millers, plain, No. 3 LeBlond.
Miller, No. 28 Ohio; No. 3 Cin'ti.
Miller, 2-GS, Hendey, g. b., s. p. d.
Millers, horiz. No. 4 Ohio, 72x30x20"
Millers, vert., Becker, 3, 4B, 5B.
Miller, No. 14 Garvin plain, (2).
Miller, universal No. 4 B. & S.
Miller, auto. No. 2-M P. & J., s p.d.
Motors, 1, 2 & 3 ph., also d. c.
Pipe machine, Williams, 3", s. p. d.
Planer, 30"x10' W. & P., 2-heads.
Press, 42-h.p. Toledo, horn, plain.
Press, No. 6 Toledo, o b. i., pl m. d.
Presses, o. b. i., 18, 20 Bliss, m. d.
Press, 74½ S. Bliss b. g., 10' str.
Press, 75½ Bliss, b g., t. r., 5" str.
Press, 78½ Bliss, d. g., t. r., 10" str. (2).
Press, No. 80½ Bliss, tie-rod, 32" str.
Presses, 250-ton B. & B tire, vert.
Punch, s. e., Badger, 7" thrt., ⅜"x⅜".
Punch & shear, d. e., 9-A., Beloit.
Punch & shear, d. e. 16" thts; 1½"x1" with angle & bar shear blades, m. d.
Punch & stake riveter, No. 123-C. Toledo boilermakers.
Riveters, 2-A, 5½ B, high speed.
Rolls, bend'g, 10'x5/16" Bertsch, d.e.
Rolls, bend'g, 5'x5/16" Bertsch, d. e.
Rolls, straightening, 22"x⅜", m. d.
Shaper, 20" Cin. G. E., a.c. motor.
Shapers, 16" and 24" G. & E., m. d.
Shaper, 24" P. & J. down feed & m.d.
Shaper, 25" S & M., b.g., crk., b. d.
Shear, 36"x16 ga., Niagara, foot.
Shear, rotary, 12" thrt., cap. 10 ga.
Shear, thtless Lennox, ⅜", ⅜".
Shear, rotary, 16 ga., Yoder, 24" thr.
Shear, 10'x16 ga. Ohl power.
Slotter, die, Garvin, cone drive.
Turret lathe, 26"x7½" h. s., Libby.
Turret, 4-I., Gisholt, 28"x9½", m. d.
Wheel press, 60-ton W. S., 34"x8½".

FOR SALE BY

Geo. M. Bernstein & Co., - 225 No. Elizabeth St., Chicago, Ill.

Die filer, Oliver, type S1, m d.
Drill, 2½' Fosdick radial, s. p. d.
Drill, 3' Silver radial, s. p. d.
Drills, Nos. 2 & 4 Colburn mfg.
Lathe, 16"x6' Star engine, pl., c. g.
Lathe, 14"x6' Champion eng., q.c.g.
Miller, No. 1½A Rockford pl., v. hd.
Oil seperator, 2 bu. American.
Planer, 30"x24' x6' Rockford, 1 hd.
Press, No. 18 Bliss o.b.i.; 1½" stroke
Sclerescope, Shore, model "C"
Shaper, 20" Kelley crank, back grd.
Shaper, 24" G. & E. crank, b. grd.
Tester, Brinnel "A" with micros.
Welder, 5 k. w. Taylor spot.
Welder, 3 k. w. Thompson butt.
10½" universal dividing heads such as Rockford, Carroll, Dickow, etc.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

1211-1223 Hadley Street. St. Louis, Mo.

Air compressors, all sizes.
Bar shear, 5' x ¼".
Boring mill, 36" Gisholt.
Bulldozer, No. 3 Williams-White.
Drills, 1 spindle Avey.
Grinder, Wells Bros. universal.
Grinder, 12"x60" Landis universal.
Grinder, No. 60 Heald cylinder.
Hammer, 60 lb Bradley helve.
Lathe, 16"x9' Lehman.
Lathe, 20"x17' Lehman, geared hd.
Lathe, 24"x12' Schumacher & Boye.
Lathe, 24" 48"x18' McCabe, 2-spdl.
Lathe, 30"x18' Lodge & Shipley taper attachment.
Lathe, 36"x15' American, q. c. g.
Millers, Nos. 3 & 4 Brown & S., pl.
Miller, No. 3 Brown & S. universal.
Miller, No. 35 Ohio.
Pipe machine, 4" and 8".
Planer, 60"x48"x10 Gray.
Press, No. 1½ Bliss toggle.
Press, No. 24 Toledo cam drawing.
Press, No. 723 Toledo cam drawing.
Punch, No. 14 W. W., 12" throat.
Punch, two 20" throats, cap 1" in 1"
Sand slinger, Beardsley & Piper.
Shaper, 16" Smith & Mills.
Shaper, 24" American, motor drive.
Tapper, auto., Rickert & Schafer.

FOR SALE BY

Scott-Bansbach Machinery Co., 4607 West 20th St., Chicago, Ill.

Air compressor, Chicago P, short belt drive, 12"x10", 369 cu. ft., 50 h. p., a. c. motor, starter, belt and tanks, Type NSB	$ 650.
Automatic screw machines, B. & S., No. 00, 0 and 2	$100. to 450.
Automatic screw machine, Gridley 4 spindle "F", 1¼" and 2¼"	$300 to 700.
Automatic screw machine, 3¾" Cleveland Model A, No 27182, as is	300.
Brake, 10' Ohl 10 gauge, motor drive with motor, late type	850.
Drill, 24" Sibley sliding head, b. g. and p. f.	125.
Drill, 2-spindle H. W., h. s., b. b. heavy duty, class B	150.
Drill, 5 spindle Henry & Wright, h. s., b. b., 12" swing	150.
Gear cutter, B. & S. No. 3, 26" for spur gears	200.
Grinder, Norton No. 1, universal cutter and tool, 8"x15"	150.
Grinder, Norton 6"x32" plain, Serial No. N3423	350.
Grinder, Gardner No. 4 disc, 23" dia. with press and tables, ball brg.	200.
Grinder, Ransom disc, 26" diameter with press and tables	150.
Lathe, 15"x8' Von Wyck, l. c. g., with chuck	125.
Lathe, 18"x8' Davis, d. b. g., q. c., heavy duty	450.
Lathe, 18"x8' 6" Chard, l. c. g., heavy duty	175.
Lathe, 18"x12' Hamilton, d. b. g., q. c., heavy duty, 2 chucks	475.
Lathe, gap, 22, 36"x8' 6" Barnes, sliding bed	575.
Lathe, 30"x13' H. S. & G. heavy duty, q. c., d. b. g. 16,000 lbs	800.
Miller, No. 2H B. & S. plain, cone type, with vise, c/s and arbors	400.
Miller, No. 1 Garvin universal, fully equipped	250.
Miller, Cleveland universal, No. 1 g. h., fully equipped	450.
Miller, No. 2 MU. Garvin universal, fully equipped	350.
Miller, 12" Cincinnati, mfg. type, s. p. d., vise and pump	150.
Miller, Briggs, G & E. manufacturing, 16"	75.
Miller, No. 5 Becker vertical, no rotary	300.
Miller, No. 7 Becker, Lincoln type	75.

FOR SALE BY

A. P. Gockel Machinery Co., 1817 East 26th St., Cleveland, Ohio

92B Toledo d. c. 6″ st., t. r. geared.
D501 Ferracute 10″ sh. 11″ st. t. r.
80⅝ Bliss s. s. 15″ sh. 32″ st. t. r.
8 Rockford s. s. 5″s h. 6″ st. flywheel.
68 Stoll s. s. 3½″ sh. 20″ Die Height.
14 Bliss toggle 9″ sh. 12½″ draw.
40 Bliss horning 2″ st., fly, m. d.
3 Bliss coining. 50 ton cap., fly.
12x10 Bury air compressor.
15 & 30 k. v. a. Taylor spot welder.

FOR SALE BY

United Machinery & Supply Co., 1241 Walton Ave., St. Louis, Mo.

Blue printer, Wickes electric.
Flanger, circle cutter, 200 Niagara.
Miter cutter, power, belt drive.
Nibbler, Gray 36″x¼″ cap.
Oil reclaimer, Stewart.
Ring heater, Jansen electric.
Rolls, 12″x¼″ cap. Niles.
Shear, power, 10′ 18″ ga.
Shears, slit'g, Braddock 18 ga., m. d.
Tube bender & forming, Wallace.

FOR SALE BY

Bradley Machinery Co., 6500 Epworth Blvd., Detroit, Michigan

Gear hobber, No. 12 Barber-C..$350.
Thread mill, No. 4 Lees-B..... 400.
Press, No. 5 Toledo o. b. i..... 275.
Grinder, No. 70 Heald internal 200.
Grinder, 14″ P. & W. Surface, b. b., m. d .....$600.
Shaper, 20″ Cin. late type m. d... 800.
No. 2 B. & S. surface, mag. ck. 250.

5000 high grade tools. Call or write on anything.

FOR SALE BY

Midwest Equipment Co., - 628-30 W. Lake St., Chicago, Ill.

Air compressors, 8x8, I. R. compl.
Arc welder, Wilson, 300 amp. cap., motor drive.
Buffers, b. b., Gardner No. 3, dbl. e.
Disc grinder, No. 2 Gardner 18″, m.d.
Gear hobber, No. 3 R.-C., arbor, grs.
Lathe, 19″x8′ Sidney, q. ch., d. b. g.
Miller, No. 2 Cincinnati univ., comp.
Miller, No. 29 Ohio universal, comp.
Press, 30 ton Lucas straightening.
Press, No. 3 Walsh, o. b. i.
Press, No. 78-C Niagara dbl. crank.
Punch press, No. 4 Rock. b.g ,3″ st.
Punch press, No. 5 R.&K. o.b.i. 2″
Screw mchs., Nos. 4 & 3 Foster, w. f.
Shear, Quickwork, pwr. dri 14 ga. cap.
Spot welders, 12½ k.w. Fed ,24″ arm.
Spot welder, 19 kva Thom., 14″ arm.

Planers, Lathes, Screw Machines, Air Compressors, Woodworking Machines.

FOR SALE BY

Brown Machinery Co., - - 2333 N. 9th St., St. Louis, Mo.

Drills: 24″, 26″ and 32″ No. 66-D Moline 4-spindle Hole Hog.
Grinders: No. 6 Besly dbl. spindle; No. 220 Badger auto. disc; 12x30″ Modern, plain, s. c. c. s.; No. 12 Brown & Sharpe, universal tool; No. 4 Cincinnati, 12x72 cylindrical.
Hammer, 40 lb. Bradley helve; 100 lb. Little Giant.
Lathes, 30″ Blaisdell, 28″ Putnam, taper att., 18″ & 16″ Lodge & S.; 16″ & 14″ Monarch; 7″x6′ Lo-swing.
Millers: No. 2 Hendey-Norton, univ.; No. 3½ Fox; No. 4 Hendey Lincoln;
Press, No. 7 Zeh & Hahneman, Nos. 1, 3, 4 Loshbough Jordan.
Punch, Cleveland C ⅝ in ¼″; Rock River Style L ⅝ in ½″.
Punch & shear, No. 9C Beloit ⅝ in ⅛″.
Riveter, No. 5A High Speed, ½″.
Shaper, 24″ Ohio; 20″ Queen City.
Threaders: ⅝″ Geometric; National 1½″ double head and single head.
Welder, 20″ k. w. Agnew.

FOR SALE BY

E. L. Klauber Machinery Co., 320-22 S. Third St., St. Louis, Mo.

Gear cutters, No. 14 Whiton automatic, 34" capacity, motor drive, complete.
Lathes, 22"-24"x12' Lodge & Shipley, q. c. g., d. b. g., also many others.
Screw machines, No. 0 Brown & Sharpe automatic; also many hand machines.
Shapers, 20" Gould & Eberhardt "High Duty", 16" Milwaukee.
Surface grinder, No 2 LaSalle automatic, with magnetic chuck.
Turret lathe, No 3 Wood tilted turret; g. f. h. with bar feed and collets.

FOR SALE BY

The E. L. Essley Machinery Co.

Telephone Lincoln 6320 - - 825-845 Rees St., Chicago

Drill, radial, 2½' American.
Drill, radial, 2½' Mueller.
Drill, radial, 5' Prentice.
Drill, radial, Cincinnati-Bick. Univ.
Drill, radial, 5' Pond.
Drill, radial, 6' American.
Press, 65C Niagara, double crank.
Shears, 10' 3/16" cap. L. & A., m. d.
Shears, 10' 3/16" cap. Bertsch, m. d.

FOR SALE BY

J. P. Rentschler & Co., - 6722 N. Maplewood Ave., Chicago

Presses, various sizes, o. b. i.
Presses, s. s. and double crank.
Presses, kick and power, horning.
Press, sgl. and dbl. crank, toggle.
Press, No 27 Bliss emboss. 1000 ton.
Press, Amer. Can type, 500 ton cap.
Apr. brake, No. 182 D.&K., 8'x14 ga.
Apr. brake, No. 206 D & K. 10'x¾".
Apr. brake, No. 227 D. & K. 12'x⅜".
Mill'g mch. No. 3A B.&S univ. m.d.
Bending rolls, 4'x16 & 6'x14 ga.
Several power squaring shears.

FOR SALE BY

J. Bieser Mfg. & Machy. Co., 16th & Madison St., Springfield, Ill.

Band saw, 30"-36" and metal cut-off.
Boring mill, No. 31 Lucas horiz.
Brake, hand, C. I. 8' Pexto, $75.
Grinder, valve, Souix $75., new.
Lathe, 36x18 Lodge & Shipley, q. c.
Lathe, bench, 9" screw cut., new.
Lathe, No 4 W. & S., p. f. turret.
Miller, Knight vertical, 4 feeds.
Millers, 3H LeBlond & Transit.
Millers, No. 3 Burke & Rockford.
Nibbler, Campbell No. 1.
Pipe machines, 2", 4", 6" and 8".
Punch presses, o. b. i. and arch.
Shears, 36" sq., Pexto new $70.

FOR SALE BY

Reliance Machinery Sales Company

1405 Brighton Road, N. S. - - - - Pittsburgh, Pa.

Air compressors, 21, 140, 170 cu. ft.
Automatic, 1½" Cleve. 4-spdl., m d.
Drill, 4 spindle No. 4 Colburn Mfg.
Drill, 4 spindle No. 2 Colburn. Mfg.
Hammer, 300 lb. Bradley up. helve.
Hammer, 100 lb. Beaudry upright.
Lathe, 48"x20' Betts-Bridge., m. d.
Miller, No. 1½ Rockford universal.
Miller, No. 2½ Rockford, vert. att.
Press, No. 2 Wat.-Farrell, 710 lbs.
Press, 64" Bliss double crk., No. 5¾.
Press, No. 12 Z. & H. percussion
Press, No. 14 Bliss Toggle, 80,000 lb.
Press, No. 59¾ Toledo, 145,000 lb.
Shaper, 16" Whipp, b. g., vee ram.
Shapers, 24" & 32" G. & E. 230 v. d. c.
Shear, squar. 60"x18 ga. Streine.
Screw mach., No. 4 W. & S., univ.
Tapper, ⅝" Acme, 6-spdl. nut.
Shear, alligator, hi. knife, 1½" sq.

FOR SALE BY

Victor Machinery Co., - 126-128 S. Clinton St., Chicago, Ill.

Auto. screw mchs., Nos. 0 & 00 B. & S.
Auto. screw mchs., 2" Cleveland (3).
Drill, 4-sp. H. & W. h. s., b. b.
Drill, 4-sp. Edlund h. s., b. b. No. 3 taper, 12" overhang.
Engraving mch., E4 Keller, m. d.
Grinder, 10x30 Webster & P. Univ.
Punch press, p., Nos. 1, 2, 3 Bliss-C.
Screw machines., No. 1 & 4 W. S.
Shaper, 20" Gould & E., b. g.
Milling mch., 1½ Rockford Univ.
Press, No. 5 Greenard arbor.

FOR SALE BY

Wigglesworth Machinery Company

199 Bent Street, - - - - Cambridge, Mass.

Boring mill, No. 0 G. & L.
Grinder, No. 2 Cinc. centerless.
Miller, 6"x18" P. & W. thread.
Miller, No. 2 B Milwaukee univ.
Miller, 48"x24"x10' Ingersoll.
Nibbler, No 1, 6" Campbell.
Planer, 30"x30"x8' Clev. openside.
Seamer, No. 3 B Bliss, double.
Shear, No. 1120 Niagara power, 18 ga.
Jones & Lamson, 2 spdl., like new.

FOR SALE BY

Temps Bros. Motor Co., - - 802 Myrtle Ave., Brooklyn, N. Y.

ELECTRIC MOTORS.

Factory rebuilt, equal to new. One year guarantee. A. C. or D. C. Single phase, 2 or 3 phase. ½ h. p. $12.50; 1 h. p. $16.00; 2 h. p. $20.00; 3 h. p. $27 50; 5 h. p. $32.50. Others to 50 h. p. Also electric grinders. Special slow-speed or high-speed motors built to order. Generator sets. Your old motor re-wound to suit any special requirements. Tell us your motor problems.

FOR SALE BY

The O'Brien Machinery Co., 113 N. Third St., Philadelphia, Pa.

Automatic, 9/16" "G" Gridley 4-sp.
Bending rolls, 10' Bertsch. ¼" cap.
Boring mill, 72" Gisholt vert., 2 hds.
Column facer, 14" Espen-Lucas.
Crane, electric travel, 15 ton a.c. mtrs.
Drills, all sizes upr., sensi. & radial.
Flanging machine, ½" McCabe.
Hammer, 800 lb. Erie, steam forging.
Lathe, 18"x6' Monarch, taper.
Miller, No. 3 B. & S., pl., s. p. dr.
Miller, Univ. No. 2B Milwaukee, range 28"x10"x18".
Miller, Univ. No. 2A Brown & S., range 25"x8"x18".
Pipe machines, 2, 4, 6, 8 and 12" belt and motor drive.
Punch, No. 3 Southwark ¾x¾", mtr.
Punch, Thomas angle duplikator.
Shear, Niagara 8', cap 3/16", 1" gap.
Turret, No. 4 Warner & S. univ.

FOR SALE BY

The Elyria Belting & Machinery Co.,

Corner Williams and Buckeye Streets, - Elyria, Ohio

Buildozer, Nos. 3 and 5 Williams & White, 16 and 20" strokes.
Die machine and scrap cutter, Henry & Wright roll-feed, 95% new, 100 ton.
Drills, Colburn Nos. 2 and 4 mfg. heavy duty.
Engine, Troy vertical throttling, cylinder 9x9.
Engine lathe, 16"x9' Mulliner-Enlund, q. c. g.
Oven, Freas electric, single door, 110 volt, 1300 watts.
Vacuum pump, Pennsylvania horizontal single stage.
Surfacer, 30" American dbl., 8" feed rolls, round heads, direct-con. to c. s., by 20 h. p. slipring motor, perfect condition, price for quick sale..... $400.00.

High Grade Machine Tools

Lathes

48"x30' Lodge & Shipley Sel.Grd.Hd.
54"x24' H. S. & G. Grd. Hd. M. D.
24"x22' Bradford, Q. C., 3 S. C. D.
30"x16' L. & S. Patent Grd. Hd.
24"x12' L. & S. Patent Grd. H.S.P.D.
18"x8' Lodge & S. sel. grd. hd., s. p. d.
9x12 Sundstrand Grd. Hd. Stub.
30"x10' Lodge & Shipley, 3 S. C. D. D. B. G. Q. C.
20"x8' Am. Grd. Hd., M. D., late t.
20-30"x7' Monarch Helical G.H.Gap
16"x6' Lodge-Shipley Sel. Grd. Hd.

Grinders

Type A Production Abrasive Finishing
Style "P" Yankee Drill Grinder.
Nos. 50, 55, 60, 65 and 70 Healds.
6"x18" Landis Plain, Self Contained.
No. 11 Brown & Sharpe Plain.
Walker Single Stroke Surface Grinder.
10"x52" Landis Plain, Self Con.
Rivett Internal Grinder.
No. 2 Brown & Sharpe Surface.
Nos. 1½ Cincinnati Tool & Cutter.
No. 3 Brown & Sharpe Universal.

Gear Cutters

No. 1 Brown & Sharpe Gear Tester.
No. 12 Barber-Colman Hobber, dbl. overarm, late type.
No. 13 B. & S. Bevel and Spur.
36BM Gould & E. Gear Rougher.
No. 3, 26" Brown & S. Gear Cutter.
18-H Gould & Eberhardt Hobber.
6", 11", 18" Gleason Gear Generators.

Bolt and Pipe Threaders

⅛" Landis Double-Spindle.
1½" Landis Sgl.-Sp., Grd. Hd. m. d.
1" Acme Class "A" Single-Spindle.
2" Landis Sgl.-Sp., lead screw attach.
2" Landis Double-Spindle.
18" Landis Pipe Threader.

Boring Mills

24"; 36" and 42" Bullard "New Era" A. C. motor drive.
60" Niles Boring Mill, 2 heads.
84" Niles Vertical, motor drive.
No. 32 Giddings & Lewis Horiz.

Milling Machines

No. 2 Van Norman Duplex Miller.
No. 5 Cincinnati High Power, Rectangular Overarm.
No. 4 Cincinnati H. P. Pl., S. P. D.
No. 2-B & 3-B Milw. Pl., Dbl. O. A.
No. 4-A Brown & Sharpe Universal.
Nos. 3; 5-B; 6 Becker Vertical.
No. 3 Cincinnati Vert. H. P., S.P.D.
Nos. 2 and 3 Cincinnati High Power Plain. S. P. D. flange nose.
No. 2 Cincinnati Universal H. P. flange nose; S. P. D.
5" Pratt & Whitney Automatic.
18" Cincinnati Plain Mfg. Miller.
Briggs Manufacturing Miller.
No. 33 Kempsmith Automatic.
No. 7-H Becker Lincoln type.
No. 1 Knight Miller and Driller.
6x48 Pratt & Whitney Thread Miller.
4½x12 Pratt & Whitney Thread Miller
No. 3 & 3-E Lees-B. Thread Millers.

Planers

24"x24"x8' Gray Planer.
27"x27"x8' Woodward & Powell.
36"x36"x10' Gray, 2 heads.
26"x26"x12' Whitcomb-B., 2 heads.

Radial and Upright Drills

3' American Triple Purpose, S. P. D.
2½' Cinti-Bickford Radial, S. P. D.
No. 2 Colburn Mfg. H. D. 2-spindle.
6-spindle Rockford 20" B. G. P. F.
No. 40 Natco Straight Line Multi.

Shapers

16", 20", 24" G. & E., mtr. dr. thru g b.
16", 20" and 24" G. & E., cone drive.
20" Steptoe, S. P. D.
24" Potter-Johnson M.D. thru gear box
24" Cinti. h. d. mtr. dr. thru gear box.

Miscellaneous

3x3x½ Bertsch Angle Bending Roll.
No. 3-B LaPointe Broaching Mche.
25 ton Henry & Wright Dieing Mche.
50 ton Henry & Wright Dieing Mche.
80 lb. Bradley Cushion Helve Hammer
Nos. 1 & 3 Baker Keyseating Mches.
No. 2 Mitts & Merrill Keyseater.
Nos. 1 & 2 Davis Keyseaters.
6 spindle ⅝" Acme Nut Tapper.
V-18 Amer. Vert. Broaching Mche.
15, 30 & 50 Ton Lucas Forcing Pr.
No. 43 Robinson Dbl. Crk. Grd. Press.
300 Ton Niles Hydraulic Wheel Press, 78" between bars.
Dwight Slate Marking Machines.
No. 50 Toledo Arch Press, 10" stroke.
Wickes Punch & Shear, 48" throat, 1¼" thru 1¼".
Peerless Universal Shaping Saw.
No. 1 & 2-X Garvin Tapping Mches.
No. 4 W. & S. Univ. Turret Lathe.
100 K. W. Federal Butt Welder.
Shuster Wire Machines; 3/16" & ½".

Write for Complete Catalogue—We Buy, Sell and Exchange

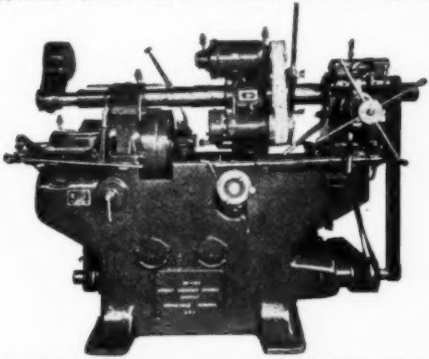
Cincinnati Machinery & Supply Co., 28 West Second St., CINCINNATI, OHIO

EMERMAN OFFERS

The following late type equipment very seldom offered on the used machinery market—every machine motor drive—guaranteed to give new machine performance

As an example—Listed here are described and illustrated some 12A Bryant 2 Spindle Hole and Face Grinders—A real production tool.

An opportunity to purchase a grinder like this at a small part of the original $4,500 cost.



No. 12-A Bryant Plain Semi-Automatic 2-Spindle Hole and Face Grinders

Chuck swing 16"; max. wheel slide traverse 11"; max. grinding length 9"; two speeds to work spindle; adj. for grinding tapers to 45° angle; water pump and piping carry water thru driving wheel; arranged for motor drive including two motors. Arranged for sizing attachment.

C-13 & C-14 Natco Hydraulic Drills.
Kingsbury, 4, 5, & 6. sp. Drills; M. D.
Bradford Multiple Head Drills; M. D.
A. E. F. 12" & 24" Throat Projection Welders.
A. E. F. Seam Welders.
No. 132 Arter Automatic Grinders.
No. 10 & No. 16 Blanchard Grinders.
No. 3 Bryant Hole Grinders.
8"x18" Cinc. Saddle Type Grinders.
Fitchburg Spline Grinders.
8" Pratt & W. Rotary Surf. Grinder.
Footburt No. 1 Surface Broach.
V-50 American Vertical Broach.
No. 412 Etna 4-die swager.
8" Clev. Model M. Chucking Mche.
Goss & DeLeeuw 11"x10" Automatic Chucking Machine.
2" Greenlee 4-spindle Automatic Screw Machine.
25-50 & 100 ton Henry & W. Presses.
Kobert No. 112 Forging Press.
50-ton Oilgear Vertical Press.
Busch-Sulzer Duo Hydraulic Press.
DG 54, 55, 56, 56½A & 57 Ferracute S. S. Presses.
DD-151 Ferracute Double Action Drawing Presses.
G-36 & G-42 Yoder Gang Slitters.
10" Standard Rolling Mill.
No. 3 Thiel Filing & Sawing Machine.
14-P Logemann Metal Scrap Baler.
Norton 1-F Vertical Lappers.
2-B Nazel Hammer.
Hammers up to 12000 lbs. Erie & Ch.
Bridgeford 36"x40' Boring Lathe.

Louis E. Emerman & Co., 1761 Elston Ave., CHICAGO, ILL.

See All These Machines Run In Our Plant

Automatics, Cleveland 5½"; Gridley 1¾", 4-spdl., 2¾"; Nat'l-Acme #52, 53, 55; P. & J. #5A, 6A, 2P.

Boring Mches., Barnes #3; Barrett #1, 2; Espen-Lucas 6", 2-spdl.; Garvin #1, 2-spdl.; G-L #0, 350; Lucas #32; N. B. P. 5"; Rockford 2"; Springfield #1 Axle Borer; Univ. #3A.

Boring Mills, Bullard 36" New Era; #4" Maximill; Colburn 48", 54"; Gisholt 30", 36", 42", 52", 60"; King 32", 42"; N. B. P. 53"; Pond 72"; Niles 10"; Putnam 48", No. 2, 48" Car Wheel.

Drills, (b. b.), L.-G. 1, 2, 4, 6 spdl.; Allen 4, 5, 8-sp.; H.&W. 2, 4, 6-sp.; Edlund 2, 6-spdl.; Avey #3, 3-spdl., #2, 4-spdl.; Sipp 4-spdl.

Drills, (Mfg.), Colburn #14 & #2—1, 2, 3, 4-sp., D-#4, D-#5; F-B #2, 4-sp.; #17, 4-sp.; #4, 4-sp.; #25, 24", 36"; Moline #10D, 4-spdl.; #13D, 4 sp., #5D, 6-sp.; Baker #3, 2-sp.

Drills, (Upright), Cinn.-Bickford 20"; Barnes 20", 22" Self-Oil Grd. & 34".

Drills, (Radial), American 2½', 3', 3' Maxi-speed. 5' pl., 6' Univ., 4' Sens.; Western 3', 6'; Reed-Pren. 4', 6; N. B. P. 4' Univ.; Hammond 4'; Carlton 2½'.

Gear Cutters, B.-C. #3, 12; G. & E. 12", 24", #36H, 18-H, #36 B. M.; Gleason 6", 18", B. & S. #3, #5, 16", #13; Fellows #6, #7.

Grinders, (Plain), B. & S. #10, 11, 12; Norton 6"x32", 10"x24", 10"x50", 10"x72", 10"x96", 14"x36", 14x72", 16"x50", 18"x96", gap; Landis 10"x20", 10"x24" 10"x36", 10"x52", 12"x72", 16"x48" crankpin, 20"x96", 20"x120", 26"x96", 28"x120"; Bryant 10"x13" with 20"x10" wheels; Cincinnati 8"x36"

Grinders, (Univ.), Bath #2, 10"x25"; B. & S. #2, 12"x30"; Landis #2A, 16"x32", #1, 10"x20"; Oakley #2;

Grinders, (Internal), Heald #70; Bryant #20 deep hole, #10.

Grinders, (Misc.), Arter 8"; Heald #200, 8", #22, 12", #255, 12"; Abrasive #33; Besly #14, 30"; Gardner #1, 12"; Cochrane-Bly #11.

Lathes, (Screw Cutting) Am. 14"x6', 18"x8', 18"x10', 20"x10', 20"x12', 20"x16', 20"x20' B-E 28"x12'; Bradford 16"x6'; Bridgeford 26"x9', 26"x10', 26"x12', 26"x16', 26"x17' oil country, 36"x14'; Chard 16"x7'; Cisco 24"x11'; Greaves-Klusman 14"x6', 16"x8', 16"x10'; Hendey 16"x6'; 16"x8', 24"x8'; Johnson 36"x16', LeBlond 14"x6', 14"x12', 15"x6', 19"x8', 20"x10', 25"x12'; L. & S. 16"x6', 16"x8', 16x10', 18"x10', 18"x14', 20"x8', 20"x12', 20"x14', 20"x16', 22"x10', 24"x12', 24"x18', 30"x12', 36"x14', 36"x22'; Pond 48"x50'; Putnam 66"x21' tr. gd.; Reed-Prent. 16"x8', 16"x9', 18"x10', 18"x13', 20"x10', all g. h.; Sebastian 13"x6' m. d.; Sidney 16"x14'; W-B 18"x12', 24"x10'; Willard 13"x6'; Walcott 18"x14'.

Lathes, (Mfg.), LoSwing 3½"x36", 3½ x60", 3½"x108", 4"x15", 7"x60", 8"x60"; LeBlond #12 Multicut, 17x6 Auto.; Porter Cable 9"x18"; Adams 13"x4short cut; Sundstrand 16"x6', 16"x10'.

Millers, (Hand) Whitney #6; US #1.

Millers, (Pl), B. & S. #0, 1, 2, 2V, 21, 3B, 3, 3B 4B, 5B; Cinn. #1, 2, 2M, 3, 3S, #4; Kempsmith #1, 2; Milwaukee #1B, 2B, Timken brgs.; Ohio #20, 34; Becker #25, 5B.

Millers, (Univ.), Cincinnati #2M; 2 HP, #3 HP, #4 HP; B&S. #2.

Millers, (Vert.), Becker #1, 4B, 5, 6; Cinn. #2M Timken brg., #2 HP, #3 HP, #4 HP; B. & S. #3, 5.

Millers, (Mfg.), Briggs B 42", 52"; B. & S. #13B; Cinn. 18", 24", 48" auto.; Kemp. #33, late spdl. nose; Sund. #3 Rigid-mill; Hendey #8 Duplex; Becker #7H; P. & W. #12; Garvin #2, 3 Duplex.

Millers (Slab), Ingersoll 24"x20', 24"x12', 48"x17', 96"x26'; Newton 36"x7'; B & S 24"x8' open side, 30"x10', 3 hds., 20" dbl. end col. facer.

Millers, (Thread), P. & W. 44"x12", 6"x14"; Foster #1 Lees Brad. #3E.

Planers Cinn. 24"x6', 30"x18', 36"x18', 56"x10', 56"x16', 56"x32', 72"x10'; Gray 24"x12', 36"x24', 48"x10', 72"x12'; Clev. 36"x8' open side; N. B. P. 36"x16', 48"x10', 48"x16', Putnam 48"x18' late model.

Presses, Bliss #20, 203; Rockford #3, 4 grd.; Toledo #4, 203, 32", #58 swaging; V & O. #2; Clev. #30-32"; Hamilton #54-55"; H. & W. 25 & 50 ton Dieing Machine.

Shapers, S & M 16"; Cinn. 24" cone and spd.; G. & E. 24" & 32".

Turret Lathes, W. & S. #4-A, 2-A, 1-A, 8, 6; Foster #1-B; B. & S. #6, 4; Libby 26", 18"; Gisholt 24", 21".

Money-back Guarantee

HILL-CLARKE MACHINERY CO.

645 W. Washington Blvd., Chicago, Ill.

REBUILT AND GUARANTEED

AUTOMATICS

¾", 1⅛", 1¼" & 2½" Gridley, 4 spdl.
1"&1⅛" New Britain, 6 spdl.
Nos. 53, 55 & 56 National Acme.
¾" & 1⅛" Cleveland Model A.
1" No. 2G Brown & Sharpe.
14" Fay chucking.
Nos. 22, 24, 33 & 34 New Britain.
Nos. 5A & 6A Potter & Johnston.

AIR COMPRESSORS

7' Globe automatic outfit.
23' Ingersoll Rand vertical.
92' Ingersoll Rand ERI.
172' Chicago Pneumatic NSB.
446' Ingersoll Rand, 2 stage.
590' Union, steam or belt.

DRILLS

3', 4', 5', 6' & 8' Western radial.
3' & 4' American radial.
21", 24" & 42" Cincinnati.
No. 216 Baker heavy duty.
Nos. 14 & 30 Natco multiple.
All makes sensitive and upright.

GEAR CUTTERS

18"-30" & 24"-36" G. & E. hobbers.
No. 12 Barber Colman hobbers
14" No. 5A Lees-Bradner hobbers.
16" Cincinnati hobber.
36" No. 6 Fellows shaper.
36" & 48" Brown & Sharpe auto.
60" & 64" Gould & Eberhardt auto.
No. 2 Bilton gear millers.

GRINDERS

Norton, 6"x32", 10"x24", 10"x50", 14"x50", 14"x72".
Landis, 6"x18", 10"x24", 12"x52", 12"x72".
Modern, 8"x18", 12"x24", 12"x60".
Cincinnati, 12"x18", 12"x36".
Brown & Sharpe, Nos. 1 & 3 Univ.
No. 2 B. & S. Surface.
No. 10 Blanchard Surface.
12", 20", 24" & 30" Gardner disc.
Nos. 70 & 75 Heald internal.
Pratt & Whitney Worm Grinders.

KEYSEATERS

¾", No. 0 Mitts & Merrill.
1", No. 0 Baker.
1", No. 1 Davis.
1½", No. 2 Mitts & Merrill.
2½", No. 4 Mitts & Merrill.
Mitts & Merrill cutters & bars.

LATHES

12"x6' & 18"x8' Hendey.
14"x6' LeBlond.
16"x6' Monarch.
16"x10' 6" American.
17"x8' LeBlond.
18"x8' Cisco geared head.
19"x10' Sidney.
20"x8' Lodge & Shipley.
26"x14' Putnam.
32"x14½ Schumacher & Boye.
48"x19' American geared head.
80"x16' Pittsburgh.

LATHES TURRET

24" and 34" Bullard New Era.
24" and 36" Bullard Rap. Prod.
Nos. 4, 6, 2A & 3A Warner Swasey.
Nos. 2, 3 and 4 Foster.
1½" and 3⅜" Cincinnati Acme.
1" and 1⅛" Milholland.

BORING MILLS

34" Colburn turret head.
42" Bullard.
42" Detrick & Harvey.
50" Bickford.
60" Colburn.
84" Niles.
100" Betts.
120" Niles.
2½" bar Cleveland horizontal.
3" bar Universal horizontal.
3" bar Rockford horizontal.
6" bar Pedrick cylinder borer.

MILLERS

Nos. 2, 3 & 4 Cincinnati.
Nos. 1½AS, 2B and 3B Milwaukee.
Nos. 1½, 2 & 3 Brown & Sharpe.
Nos. 1½, 2 and 2½ Rockford.
No. 1½ Rockford Universal.
No. 2½ LeBlond Universal.
No. 3 Brown & Sharpe Universal.
No. 2 and 4 Cincinnati Vertical.

MISCELLANEOUS

Nos. 22, 23 & 25 W.&W. Bulldozers.
150 ton Ferracute coining press.
36"x36"x12' Cleveland O. S. planer.
20" & 24" Gould & Eber. shapers.
1" & 2" Landis threaders.
9"x9" Peerless hack saw.

1500 Tools in Stock. Send for List.

MILES MACHINERY COMPANY

Saginaw W. S., Mich.

Shear, 12'x10 gauge Niagara Power Squaring No. 3144, m. d.	$ 950.
Boring Mill, 51" Betts Vertical, 2 heads	600.
Chucking Machine, No. 24 New Britain Automatic	300.
Drill, No. D 3 Colburn Heavy Duty, cap. 3" in steel	525.
Hammers, High Spd. Rivetting, Nos. 1½B, 2A, 3A, 3A H.D., 4A & 5A.	
Knife Grinder, 156" Bridgeport, motor drive	1,500.
Planer, 48"x48"x20' Detrick & Harvey Openside	1,700.
Press, No. 24 Stoll Horning, 2" str., with table	275.
Press, No. 67 Stoll s. s. geared, 10" stroke, friction clutch	1,000.
Press, No. 96 Toledo double crank, tie rod, 60" wide, 8" stroke.	
Shear, 4" sq. cap Hilles & Jones Guillotine Bar, No. 4	1,250.
Upsetter, 3" & 3½" Acme Steel Bed—REBUILT	2,450 and 2,950.
Upsetter, 4" Ajax Steel Bed—$3,000:—REBUILT	4,000.

D. C. Oviatt & Co., 2170 Lakeside Ave., Cleveland, O.

No Risk—Completely Rebuilt

10' Betts vertical Boring Mill, geared feeds, motor drive.
36" Bullard, New Era Type, vertical turret Lathe, motor drive.
30" King vertical Boring Mill, motor drive.
No. 31 Lucas horizontal Boring Mill, gear box, motor drive.
4' Fosdick plain Radial Drill, gear box, motor drive.
16"x72" Landis crankshaft Grinder, self-contained, motor drive.
No. 2 Cincinnati vertical Milling Machine, slot nose, motor drive.

Send for Complete Stock List.

Iroquois Machinery Co., No. 660 Ohio Street, BUFFALO, N. Y.

It's Your Money But Why Waste It ?

Auto. screw mchs., Nos. 00 & 2 B. & S.; No. 52 Acme; 1½" Grid., 5-sp. Dav.
Bending rolls, pyramid, 10' ⅜"; 8' ¾"; 8' 5/16"; 6' ¼"; all drop end.
Bend'g rolls, initial, Beloit 42" 10 ga; 50" ¼"; Bertsch 10' 10 ga; 5' 16 gauge.
Brakes, Chgo. Steel Power, 6' 10 ga.; 10' 3/16; 10' ¼; 12' ⅛.
Gang punches, 6 to 16 ft. with sub presses.
Hammers, Nos. 1A, 4A Hi-speed; Nos. 2 & 3 Grant motor drive.
Lathes, spin., Pry. b.b. 22", 18" 22-44" gap. Eng. 32x20, 18x8, 22x10, 17x8, 24x22.
Press brake, 8' Chicago Steel, m. d.; 10' 3/16" and 10' 5/16" L. & N.
Presses, deep gap No. 17 Tol.; dble. crank Bliss Nos. 24-F No. 90-B Tol. No. 92-C & 92-G 5" str.; horn, No. 16 & No. 39 Bliss; No. 14 Nia.; No. 42-A Tol. swng. table; o. b. i., Nos 7 McDon.; No. 0 L. & J. bench d. m. d.; No. 20 Bliss d. m. d.; open back No. 83 Cleve. b.g. 90 ton; strght side No. 77½ Bliss; No. 59 Toledo; No. 51 Tol. Arch 6" str.; 500 ton. emb. press, No. 27 Bliss 1000 ton emb.. No. 2W Bliss Wiring Press.
Shears, 30" gang slit. cir. shears; No. 20A Quickwork; Squar. pow. Nia. 10' 3/16"; 6' 10; 36" 18, 30" 14; 42" 14 Peer; foot pwr. 22" to 96" long.
Welders, flash & butt 25 to 75 k. w.; Spot 12 & 30 k. w. A. E. F.; 10. k. w. Fed.

MISCELLANEOUS

Angle Iron Roll, No. 1 Buffalo, m.d.	Grooverss, No. 2A Nia. pow. 18 ga.
Beader & flng. No. 334-A Tol. 16 ga.	Shaper, 24" P.&J; 17" S.&M.; 20" O.
Schatz Univ. Iron Worker.	Tumbling barrels, Sly (2) 36x72".

INVENTORY CLOSE-OUTS

4-Spindle Drill	$ 60.	2-Sp. Am. Wood Shaper	$ 55.
No. 5 Bliss B. G. Press	200.	12" Superior Jointer	60.
24"x22' Lathe	185.	42"x12' Pond Planer	325.
3½" Horiz. Boring Mill	500.	6' Fosdick Radial	225.
No. 4 Becker Vert. Miller	125.	Cleveland Punch	100.
No. 2 W. & W. Bulldozer	125.	Harding Monitor Lathe	100.

Middle-west's Most Complete Stock of Sheet Metal Machinery.

Interstate Machinery Co., 130-2 So. Clinton St., Chicago

Modern Machine Tools

MILLING MACHINES

18", 24", 48" Cincinnati Auto. duplex.
18", 24", 48" Cincinnati Auto. plain.
No. 21 Brown & Sharpe Automatic.
No. 3 Sundstrand Rigidmill.
No. 33 Kempsmith Production.
No. 3, 4 Brown & S. Univ., s. p. d.
No. 3, 4 Cincinnati Universal, s. p. d.
No. 2M Cincinnati Universal, s. p. d.
48" Ohio offset Millers, m. d., new.
No. 2 Kempsmith Moxi-Mill, mtr. in bas.
No. 2, 3, 4, 5 Cincinnati Plain, m. d.
No. 3 Brown & Sharpe Plain, m. d.
No. 1M, 2M Cincinnati Plain, s. p. d.
No. 2, 3, 4 Cincinnati Vertical, m. d.

ENGINE LATHES

14"x6' American, cone.
14"x14' American grd. hd. motor in leg.
14"x8' Reed-Prentice geared head.
16"x6' Lodge & Shipley, sel. head.
16"x8' American, geared head.
18"x8' Boye & Emmes cone.
18"x10' American geared head.
20"x8' American geared head.
21"x10' LeBlond cone.
24"x10' American geared head.
24"x12' LeBlond cone.
30"x14' Lodge & Shipley cone.
36"x14' American geared head.
36"x18' American, cone head.
36"x28' American, geared head.
36"x40' American, geared head.

TURRET & MFG. LATHES AND SCREW MACHINES

No. 23- 24 New Britain automatic.
No. 53, 54, 55 Nat. Acme 4-sp. auto.
No. 5A, 6A Potter & Johnston auto.
No. 4L Gisholt, m.d., 9" hole in sp.
No. 2, 4, 6, 8 Warner & Swasey.
No. 2A, 3A Warner & Swasey Univ.
No. 4 Warner & Swasey Universal
No. 4G Milholland geared head.
3x36" Jones & Lamson, 2 spindle.
13", 21", 24" Gisholt.

PLANERS AND SHAPERS

60"x48"x24' Gray, 3 heads.
48"x48"x20' Cinti., m. d., 4 heads.
36"x36"x12' Gray, revers. m.d., 3 hds.
33"x33"x8' Ohio, 2 heads.
24" American Shaper, s. p. d.
24" G. & E. Inv., auto oiled, s. p. d.
20", 24", 28" Gould & E., cone.
20" Hendey, cone.
20", 25", 32" Smith & Mills, cone.
24" Potter & Johnston univ., cone.

GEAR CUTTERS AND HOBBERS

10" Gleason Mfg. spiral bevel gr. m.d.
6", 11", 18" Gleason bevel gear gen.
No. 6, 61, 615, 7, 75 Fellows gear.
No. 3, 4, 13, 13H B. & S. gear cutters.
16" Cincinnati automatic gear hobber.
No. 18H, 18HW G. & E. gear hob.
No. 2, 3, 12 Barber-Colman hobbers.
12", 30" Ingle gear tooth round.

GRINDERS

No. 60, 65 Heald Cylinder.
No. 70 Heald Internal, clutch head.
No. 255, 12" Heald surface.
60" Springfield automatic face.
60" Bridgeport automatic face.
No. 2 Cincinnati Univ. tool & cutter.
No. 2, 4 Oliver drill grinders, m. d.
No. 16, 26" Blanchard vert. surf., b. d.
No. 1, 2, 3, 4, 13 Brown & S. Univ.
No. 14 Gardner double disc.
No. 51 Besly Disc, motor drive.
No. 33 Abrasive Vertical Sur. m. d.

RADIAL AND UPRIGHT DRILLS

2½', 3' Carlton sensitive radials.
3' American sensitive.
3½, 4, 5, 6, 7' American Triple Purpose
5', 6' American Triple Geared.
3' 3½' Morris Plain Radials.
4' Fosdick Plain.
3½', 5' 6' Cincinnati-Bickford Plain.
4' Dreses Full Universal.
21", 24, 28, 36" Cin.-Bickford Upr.
D2, D3, D4 Colburn H. D. Upright.
20", 22", 26", 34" Barnes Upright
Avey H. S. ball bearing, No. 3 taper.
Avey H. S. B. B. No. 2 taper.
4-spindle Leland-Gifford, power feed.
4 and 6 spindle Moline Hole Hogs.
No. 00S Garvin Horizontal Duplex.
No. 25 Bausch Multiple, m. d.
No. 30 Nateo Multiple, m. d.
No. 121, 216, 217, 220, 310, 314, 417 Baker H. D.

MISCELLANEOUS

Air Comp. 10x8" Chicago Pneumatic.
Air Comp. 10x10" & 14x14" Bury.
Arbor press, No. 3, 3½, 4, 5 Greenerd
Boring mills, 24", 36", 42" Bullard.
Boring mill, No. 0 Gidding & L. horiz.
Boring mill, No. 350 Giddings & L.

Write for new Stock List No. 34 listing 1500 machines in stock.

THE EASTERN MACHINERY CO.

3265 Spring Grove Ave., CINCINNATI, OHIO

Special Bargains For January

800 ton American Can embossing press.
No. 308 Bliss straight side press, 8" stroke, very fine.
No. 176 Toledo toggle drawing press, nearly new.
No. 487 Hamilton, dble. crank press, 8" stroke, motor drive.
No. 8 Bliss double crank press, 10" stroke, motor drive.
No. 7 and 10 Zeh-Hahneman percussion presses.
54" Bullard Maxi Mill, A. C. motor drive.
14" P. & W. vertical surface grinder, model 2B; Mag. chuck.
6-spindle Allen high speed ball bearing drill and motor.
No. 6 Becker vertical miller, rotary table.
No. 00 Brown & Sharpe high speed threaders, (seven).
No. 00-0-2-00G & 5G Brown & Sharpe automatics.
No. 50 Heald internal grinder, a. c. motor drive.
Walker tool room grinder, self contained, with equipment.
36"x15' Betts planer, two heads, heavy pattern.
3/8-1/2"; 5/8-7/8" model A Cleveland auto. screw machines.
5 1/2" model A Cleveland automatic.
No. 2 Foster plain and friction head screw machine.
6"x32" Norton plain grinders, (two).

Many others—grinders, lathes, drills, turret lathes. Send in your inquiries.

A. D. White Machinery Co., 108 N. Jefferson St., CHICAGO, ILL.

Late Type Machine Tools

Cincinnati Centerless Grinders (2).
Blanchard No. 16 Vert. Grinder
B. & S. No. 13 Univ. & Tool Gr.
Heald No. 20 Vertical Grinder.
No. 2 B. & S. Surface Grinders (4).
No. 33 Abrasive Surface Grinder.
24"x44" Landis Crankshaft Gr.
62"x1/2" Stamco Shear.
96"x3/16" Geo. Ohl Shear.
96"x3/16" Geo. Ohl Brake.
16"x6' L. & S. Gd. Head Lathes.
33"x12' L. & S. Cone Dr. Lathe.
20"x10' Amer. Gd. Hd. Lathe.
24"x10' Amer Gd. Hd. Lathe.
46"x28' Houston S. & G. Lathe.
60"x50' Pond Lathe.
76"x40' Putnam Lathe.
14'—20' Niles Vert. Boring Mill.
42" Bullard Vertical Turret.
44"—36" Niles Vertical Turret.
42" Gisholt Vertical Boring Mill.
Barrett No. 1 Cylinder Borer.
Lucas Horizontal Boring 3 lb. bar.
1 1/2" Ajax Upsetter
No. 2B Milwaukee Univ. Miller.
No. 3B Milwaukee Univ. Miller.
No. 4 Cinn. Vert. Miller, Late.
No. 1/2 Van Norman Miller.
10 K. W. Auto Toledo Welder.
20" G. & E. Shaper Latest M. D.
24" G. & E. Shaper Cone Drive.
No. 2A W. & S. Turret Lathes (2).
No. 1B Foster G. H. Turret.
No. 21 1/2 Bliss Incl. Power Press.
10" Dill Slotter.
Radial Drills, Keyseaters.

AND MANY OTHERS

Kennard-Rafkin Machinery Corp.

224-230 Culver Ave., :-: Jersey City, N. J.

Plain, Universal, Surface and Disc Grinders

1—6x18 Landis Plain, Self Contained.
1—No. 11 Brown & Sharpe Plain, Self Contained.
1—No. 11 Brown & Sharpe Plain, Countershaft.
1—No. 12 Brown & Sharpe Plain, Self Contained.
1—No. 14 Brown & Sharpe Plain, Self Contained.
1—No. 14 Brown & Sharpe Plain, Drum Countershaft.
1—No. 2 Brown & Sharpe Universal, with countershaft.
1—No. 2 Brown & Sharpe Surface, with magnetic chuck & c/s.
1—No. 2 Brown & Sharpe Surface, with 220 volt, 3 phase motor.
2—No. 3 Abrasive Surface, with 220 volt, 3 phase motor in base.
1—30"x84" Diamond Face Grinder.
1—Gisholt Tool Grinder.
1—New No. 10 Besly 18" Disc Grinder, with c/s.
1—New No. 8 Besly 20" Disc Grinder, with c/s.
1—New No. 14 Besly 26" Disc Grinder, with c/s.
1—New No. 17 Besly 30" Disc Grinder, with c/s.
1—New Rickert-Shafer Grinder.

WE CARRY A FULL STOCK OF USED MACHINE TOOLS—

Your inquiries will be appreciated.

The Strong, Carlisle & Hammond Co.

1392 West Third St.
CLEVELAND, OHIO

2832 East Grand Blvd.
DETROIT, MICH.

Latest Type, Equal to New Machine Tools

Planers:

Cincinnati 72x60x20', 4 heads.
Gray 48x48x12.
Gray 48x48x16.
Gray 60x48x12.
10 other Planers.

Grinders:

Landis 20x168" plain, motor drive.
Landis 6x18, 10x36, 10x52, 10x72, 10x96" plain.
Norton 10x72 plain.
Landis, No. 3 Universal.
Heald No. 50, 72, Hydraulic.
Heald No. 60, 65 and 70 Internal.

Lathes:

From 12" to 60" swing.
150 machines in stock.

Boring Mills:

N. B. P. 100" Heavy Duty 2 heads.
Cincinnati 96", 2 heads.
N. B. P. 53", 2 heads.
Bullards 24", 36", 42" New Era.

Gear Cutters:

Gleason 25" Double tool latest.
Pfauter No. 4, 78" capacity.
B. & S. 3, 4, 5 and 6.
Gould Eberhardt 72x12.
Fellows No. 6, 61, 615 and 65.
Fellows No. 7, 75.

Milling Machines:

Cincinnati No. 2, 3, 4 Horizontal.
Cincinnati No. 2, 3, 4 Vertical.
Ingersoll 48x48x16' 4 hd. adj. rail.
Ingersoll 48x48x12' 4 hd. adj. rail.

Over 1000 other tools—send us your inquires.

MOREY MACHINERY CO., Inc.

410 Broome Street, :-: New York, N. Y.

72" N. B. P. Vert. Boring Mill, M.D.
6" Oster Pipe Mch. with dies, B. D.
Northern hand pwr. Cranes 10 & 12 ton.
Pitman Alligator Shear, cap. 1¼".
36"x16' S. & B. S.B.G. Lathe, T.A.
18"x8' Superior Q.C.G. Lathe, b. dr.
B-2 Nazel Air Ham. cap. 3" sq. M.D.
No. 4 B&S Univ Miller, div. H&T st.
No. 3 H&J dbl. angle Sh., cap 6x6x1".
No. 5 H&J Beam Punch, cap. 30" beams
800 lb. Billings & S., Brd. Dr. Hammer
250 lb. Little Giant Pwr. Ham., M.D.
Lennox Rotary Bevel Shear, ¾" cap.
50" Bertsch pw. Sh. 16" gap, 3/16" cap.
80" Bertsch Bend. Rolls, 5/16" cap.
50 HP Bruce Abb. 2-cyl. Vert. Gas E.
10' Garrison Pow. Press Brake, 16 ga.
8' Keene hand brake, cap. 16 gauge.
250 ton Caldwell hydraulic wheelpress.
16" Cin., & 32" Cin. M. D. Shapers.
No. 6 Bryant Internal Grinder, b. d.
42"x10' D. & H. Openside Planer.
42" Bullard New Era bor. mill, s. h., m. d.
9½x12" Worth. Air Comp, cap. 185 c.f.
4½"x5" I-R Air Com. with air tank.
Rockford Hor. Boring Mill, 3" bar.

Russell Machine Co., 1447 Oliver Bldg., Pittsburgh, Pa.

EXCEPTIONAL AIR COMPRESSOR

Chicago Pneumatic Tool Company, Type O-CE Air Compressor, compound, two-stage, cylinder sizes 15x9x12", displacement 675 cu. ft. of air per minute against 125 lbs. pressure. Serial No. 22425, with all equipment. Direct connected to 125 H. P. Gen. Electric Synchroneous Motor, 220 V., 3 ph., 60 cycle, A. C., Type **TS,** 277 R.P.M., with starting equipment. Also code built air receiver. Purchased new in 1929. Price **$2750.00.**

RAILWAY CAR & EQUIPMENT CO., EAST CHICAGO, INDIANA

FOR SALE BY

Maplewood Machinery Co. Inc., 2634-38 Fullerton Ave., Chicago

6' Curtis Sander, including 5 H.P. mtr.
4', 6', 8' & 10' Power Press Brakes.
Three 10' 3/16" capacity Power Shears, motor drive.
Band Saw, Superior 36", 5 H. P. mtr.
Brakes, Steel Bending, all sizes.
Roller Die Machine, 7-Spindle including 7½ H. P. motor.
20" Kelly Shaper.
Power Swedging Machine.
Power Roller, 5' 10 ga.
Press, Elms 250 Ton Hydraulic.
Shear, 8' Niagara Foot.
8 & 10' Niagara Power Shear, 18 ga.
Ryerson Serpentine Shear, 10 ga.
No. 30 Canedy-Otto Bench Drill.

Bargains In NEW H. S. Cutters

	Size	Net Price		Size	Net Price
H. S. Slitting Saws	3x3/32x1	$1.19	H. S. Side Cutters	4x3/16x1	$3.50
" " "	5x3/32x1	2.20	" " "	5x7/16x1	6.00
" " "	7x3/32x1	4.00	" " "	5x1x1	8.00
H. S. Side Cutters	2¾x½x1	3.00	" " "	5½x½x1	6.50
" " "	2¾x5/16x1	2.60	" " "	5x¾x1¼	7.00
" " "	4x½x1	4.50	" " "	2¾x¼x⅛	2.25

Victor Machinery Exchange
251 Center Street, New York, N. Y.

GRINDERS

27 R. Blanchard vertical, Motor in spindle, 60" Magnetic Chuck.
No. 16 Blanchard Vertical, Motor in spindle 26" Magnetic Chuck.
No. 16 Blanchard Vertical Belt Drive 26" Magnetic Chuck.
36"x144" Brand New Norton Roll, Crowning Attach, Motor Drive.
24"x144" Landis Plain, With Taper Grinding Attachment.

LATHES

48"x18' American.
36"x32' Simplex.
27"x16' American Taper.
24"x14' Lodge & Shipley.
20"x10' American.
16"x10' Lodge & Shipley.
All Lathes Geared Head Type. Constant Speed Drive.

BORING MILLS VERTICAL AND HORIZONTAL

16' Extension Type to 20" Niles.
14' Niles.
90" Niles Bement Pond.
72" Niles Bement Pond.
72" Gisholt.
61" and 64" Bullard Maxi Mill.
42", 36", 24" Bullard New Era.
No. 32 Giddings & Lewis Precision Table Type.
8" Bullard Mult. Automatic.

MILLING MACHINES

No. 3 Cincinnati Universal.
No. 1½B. Milwaukee Universal
Ne. 5, 4 Cin. Rect. Overarm.
No. 4 Cinc. Vert. Intermit. Feed.
No. 3, 2 Cincinnati Vertical.
No. 5, 4, 3, 2 Cincinnati, Plain.
All Millers have Power Rapid Traverse. Arranged Single Pulley Or Constant Speed Motor Drive.

MISCELLANEOUS

96" Gould & Eberhardt Gear Hobber.
120"x96"x20' Cincinnati 4 Head Planer. Power Rapid Traverse. Forced Feed Lubrication to Vees. Reversing Motor Drive.
5', 4' American Triple Purpose Radial Drills.

Sun Machinery Company, Inc. 45 Van Buren St., NEWARK, N. J.

GUARANTEED — REBUILT

MACHINE TOOLS

We have a complete stock of metal-working machines of every description. Each machine is thoroughly tested and sold with a money back guarantee.

Visit our new large Showroom and Warehouse in Jersey City, at the entrance to the Holland Tunnel. Our high quality stock is always open for inspection.

There are over 2,000 Simmons "Restored" metal working machines in our warehouses ready for shipment!

Ask for current list and catalogue

Need some good tools? Let us quote you.

SIMMONS MACHINE TOOL CORP.
ALBANY JERSEY CITY

PRICED TO SELL

BALL BEARING LATHES

In Addition to Belted Types Shown, We Have Some

6 H. P. 230 V. D. C. Motor on Spindle Type

Please State Number and Type Wanted

AMERICAN MANUFACTURING CONCERN

U. S. 131 At M. C. R. R.—5

KALAMAZOO :-: :.: :-: MICHIGAN

NEW 5 HP 3 phase motors $61.75

LATHES

12"x 5' Cleveland, geared head.
14"x 6' Carroll-Jamieson, q. c.
18"x 8' American qk. ch., taper att.
24"x14' LeBlond.

TURRET LATHES and SCREW MACHINES

Nos. 52, 53 and 55 National Acme.
21" and 24" Gisholt, (motor drive).
⅞" capacity Acme.
13/16" capacity Foster (2).

SHAPERS

16" Smith & Mills, motor drive.
16" Ohio back geared, crank.
20" Smith & Mills, back grd. crank.
25" Smith & Mills, back grd. crank.

PRESSES

No. 2 Bliss Consol. O. B. I., new.
No. 21 Bliss Consol. O. B. I., new.
No. 39 Bliss horning.
Emco bench.

DRILLS and RADIALS

4-spindle Demco bench (new).
4-spindle No. 1-B Avey high speed.
21" Cincinnati-Bickford, T. A.
5' Baush radial.
22", 24", 26" and 32" sliding head.
No. 66 D Hole Hog 7-spindle.

MILLING MACHINES

24"x20"x8' Ingersoll horizontal, motor drive, like new.
No. 3 B. & S. Universal.
No. 4 Lees-Bradner thread miller.

GRINDERS

No. 1 W. & M. surface.
6"x15" Fitchburg plain.
16"x42" Landis universal.
10"x20" Landis plain.

MISCELLANEOUS

Blowers, positive pressure.
Boring mill, No. 3 Colburn.

THE OSBORNE & SEXTON MACHINERY COMPANY
Dept. H.
COLUMBUS OHIO

Index of Advertisers

A

Abart Gear & Machine Co. ..... Front Cover
Acme Industrial Co. 18
American Mfg. Concern 52
American Tool Works, Inc. 11
Anderson Bros. Mfg. Co. 16
Armstrong Bros. Tool Co. 6
Armstrong-Blum Mfg. Co. 11
Atlas Press Co. 6

B

Baumbach Mfg. Co., E. A. 25
Bernstein & Co., Geo. M. 38
Bleser Mfg. & Mchy. Co. 40
Boston Gear Works Inc. 15
Bradley Machinery Co. 39
Brown Machinery Co. 39
Brotherhood & Son, Percy M. 34
Burke Machine Tool Co. .....

C

Carroll & Son, Wm. 9
Chicago Wheel & Mfg. Co. 28-29
Cincinnati Mchy. & Supply Co. 42
Cullman Wheel Co. ..... Back Cover

E

Eastern Machinery Co. 47
Eisler Electric Corporation 18
Elyria Belting and Machinery Co. 41
Emerman & Co., Louis E. 43
Essley Machinery Co., E. L. 40

F

Foote-Burt Co. 4

G

Gockel Machinery Co., A. P. 39
Gouse, James J. 34
Graham Manufacturing Co. 17
Grant Mfg. & Machine Co. 16

H

Hill, Clarke Machinery Co. 44

I

Illinois Testing Laboratories, Inc. 25
Interstate Machinery Co. 46
Iroquois Machinery Co. 46

J

Johnson & Sons Mchy. Co., Wm. C. 38
Jones Mch. Tool Co. Cincinnati 36

K

Kennard-Rafkin Mchry. Corp. 48
Klauber Machinery Co., E. L. 40

Index of Advertisers—Continued

L

Lewthwaite Machine Co., T. H. 21
Lucas & Son, J. L. 36
Luma Electric Equipment Co. 27

M

McDonald Machinery Company 37
Maplewood Machinery Co. 50
Marr-Galbreath Machinery Co. 37
Martin Tool & Die Works, J. E. 12
Maxwell Co., F. A. 9
Midwest Equipment Co. 39
Mid-West Machine Tool & Supply Co. 34
Miles Machinery Co. 45
Morey Machinery Co. Inc. 49

N

National Machine Tool Co. 7
Nicholson & Co., W. H. 23

O

O'Brien Machinery Co. 41
Osborne & Sexton Mchy. Co. 52
Oviatt & Co., D. C. 46

P

Procunier Safety Chuck Co. 15

R

Railway Car & Equipt Co. 50
Reliance Machinery Sales Co. 40
Rentschler & Co., J. P. 40
Russell Machine Co. 50
Ridge Tool Co. 27

S

Scott-Bansbach Machinery Co. 38
Segal Machinery Co. 34
Simmons Machine Tool Corp. 51
Stackbin Corp. 23
Stegeman Machinery Co. 34
Strand & Co., N. A. 22
Strong, Carlisle & Hammond Co. 49
Sun Machinery Co. 51
Sun Oil Co.
Sundstrand Machine Tool Co. Inside Front Cover

T

Temps Bros. Motor Co. 41
Thompson Grinder Co. 7

U

United Machinery & Supply Co. 39
Used and Rebuilt Machinery 34 to 52

V

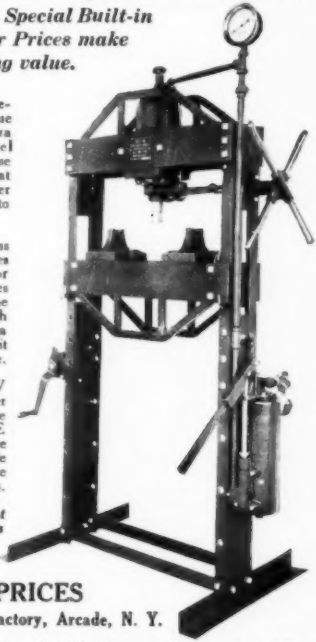
Victor Machinery Exchange Inc. 50
Victor Machinery Co. 41

W

Walls Sales Corporation 12
Walton Co. 22
West Penn Machinery Co. 35
Western Tool & Mfg. Co. 21
White Machinery Co., A. D. 48
Whitney Metal Tool Co.
Wigglesworth Machinery Co. 41
Wilson, K. R. Inside Back Cover
Wittek Manufacturing Co. 5

KRW Hydraulic and Sensitive ARBOR PRESSES

New Improvements, Special Built-in Features and Lower Prices make them an outstanding value.



THE last word in convenience, efficiency and ease of operation. Built extra strong and well braced, with steel trusses electrically welded, these presses will withstand strains that would cause presses of lighter and inferior construction to buckle or collapse.

Hand wheel for sensitive press operations has sliding handles which pull out to the ends for increased leverage. Work does not have to be changed from the work table as is the case with other make presses having a separate sensitive press unit mounted on the side or elsewhere.

The importance of this KRW feature as a time and labor saver can be appreciated. Also there is NO EXTRA CHARGE for this important built-in feature on a KRW Press. Work table can be raised easily with one hand. A strictly one-man Press.

Write for special circular, just off the press, giving full details and specifications of all KRW Arbor Presses.

PRICES

F. O. B. Factory, Arcade, N. Y.

No. 37—35 ton Hydraulic and Sensitive Arbor Press (hand operated)	$128.00
No. 37B—35 ton Hydraulic and Sensitive Arbor Press (air-oil operated)	128.00
No. 37E—50 ton Hydraulic and Sensitive Arbor Press (hand operated)	150.00
(Can also be furnished in air-oil operated at same price)	
No. 37F—70 ton Hydraulic and Sensitive Arbor Press (hand oper. only)	275.00

Gauge and fittings, $15.00 extra on all presses.

K. R. WILSON

10-16 Lock Street, Buffalo, N. Y., U. S. A.

EXPORT DEPARTMENT
90 West St., New York, N. Y.

WEST COAST BRANCH
722 Mateo St., Los Angeles

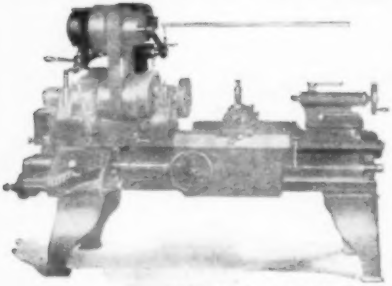
The Cullman Lathe Drive

A Motor Drive Unit
with
Belt Drive Smoothness
for your

LATHES,
SHAPERS,
MILLING and
SCREW MACHINES

Easily Installed.
4 bolts attach this unit to
your machine.

SOLD ON APPROVAL



Send for complete information

We also manufacture a complete line of Sprockets and Speed Reducers

DROP US A CARD TODAY

The Cullman Wheel Co.

1359 Altgeld Street, Chicago, Illinois